CDX-CA650X/CA660X/CA690X

SERVICE MANUAL

Ver 1.1 2001. 07

US Model
Canadian Model
CDX-CA650X/CA660X
E Model
CDX-CA690X

Photo: CDX-CA660X

• The tuner and CD sections have no adjustments.

AUDIO POWER SPECIFICATIONS (US Model)
POWER OUTPUT AND TOTAL HARMONIC DISTORTION
23 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 20 Hz to 20 kHz with no more than 5% total harmonic distortion.

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-393X-121//K
Optical Pick-up Name	KSS-720A

SPECIFICATIONS

CD player section

Signal-to-noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit
Laser Diode Properties (US, Canadian Model)	
Material	GaAlAs
Wavelength	780 nm
Emission Duration	Continuous
Laser output power	Less than 44.6 µW*

* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.*

Tuner section

FM

Tuning range	87.5 – 107.9 MHz (US, Canadian model)
FM tuning interval (E Model):	
	50 kHz/200 kHz switchable
	87.5 – 108 MHz (at 50 kHz step)
	87.5 – 107.9 MHz (at 200 kHz step)
Antenna terminal	External Antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	66 dB (stereo), 72 dB (mono)
Harmonic distortion at 1 kHz	
	0.6% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

AM

Tuning range	530 – 1,710 kHz (US, Canadian model)
AM tuning interval (E model):	
	9 kHz/10 kHz switchable
	531 – 1,602 kHz (at 9 kHz step)
	530 – 1,710 kHz (at 10 kHz step)
Antenna terminal	External Antenna connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	30 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	50 W × 4 (at 4 ohms)

General

Outputs	Audio outputs
	Power Antenna relay control lead
	Power amplifier control lead
Inputs	Telephone ATT control lead
Tone controls	Bass ±10 dB at 62 Hz (US, Canadian model)
	Bass ±8 dB at 100 Hz (E model)
	Treble ±10 dB at 16 kHz (US, Canadian model)
	Treble ±8 dB at 10 kHz (E model)
Loudness (E model)	+8 dB at 100 Hz
	+2 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 178 × 50 × 176 mm (7 1/8 × 2 × 7 in.) (w/h/d)
Mounting dimensions	Approx. 182 × 53 × 161 mm (7 1/4 × 2 1/8 × 6 3/8 in.) (w/h/d)
Mass	Approx. 1.2 kg (2 lb. 10 oz.)
Supplied accessories	Parts for installation and connections (1 set)
	Front panel case (1)
	Card remote commander RM-X114

Note
This unit cannot be connected to a digital preamplifier or an equalizer.

Design and specifications are subject to change without notice.

FM/AM COMPACT DISC PLAYER

9-870-259-12
2001G0400-1
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Sony Corporation
e Vehicle Company
Shinagawa Tec Service Manual Production Group

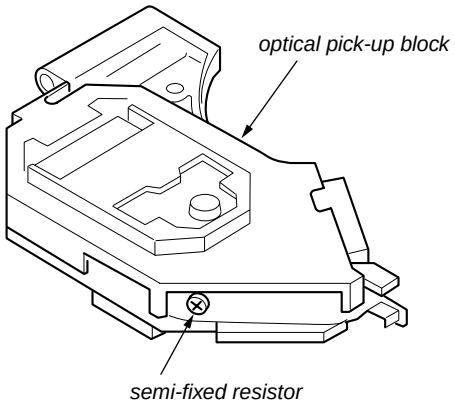
SONY®

SERVICE NOTES

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

If the optical pick-up block is defective, please replace the whole optical pick-up block.
Never turn the semi-fixed resistor located at the side of optical pick-up block.



NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

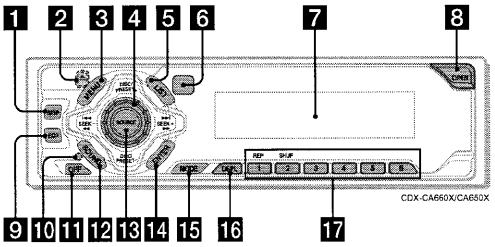
SECTION 1
GENERAL

This section is extracted from instruction manual.

Location of controls

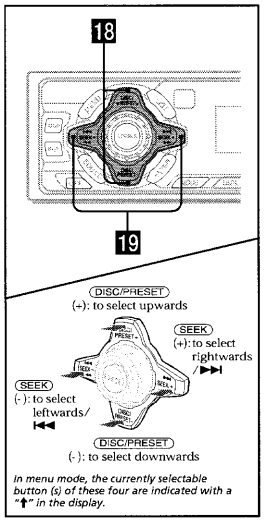
Refer to the pages listed for details.

CD/MD : During Playback
TV : During TV reception
RADIO : During radio reception
MENU : During menu mode



1 **MBP (My Best sound Position) button 19**
2 **⏏ (eject) button** (located on the front side of the unit, behind the front panel) **9, 22**
3 **MENU button 9, 11, 12, 13, 15, 19, 20, 21, 22**
4 **Volume control dial**
5 **LIST button**
CD/MD **11, 12**
RADIO **15, 16**
6 **Receptor for the card remote commander**
7 **Display window**
8 **OPEN button 8, 9**
9 **EQ7 button 20**
10 **RESET button** (located on the front side of the unit, behind the front panel) **7**
11 **OFF (Stop/Power off) button* 8, 9**
12 **SOUND button 18, 19**
13 **SOURCE (Power on/Radio/CD/MD) button 8, 9, 10, 11, 13, 14, 20, 21, 22**
14 **ENTER button**
CD/MD **12**
RADIO **16**
MENU **9, 11, 12, 13, 15, 19, 20, 21, 22**
15 **MODE button**
CD/MD **10, 11**
RADIO **13, 14**
TV **21**
16 **DSPL (display mode change) button 10, 11, 15**
17 **Number buttons**
CD/MD
① **REP 10**
② **SHUF 10**
RADIO **14**
TV **22**

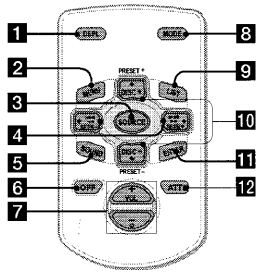
* **Warning when installing in a car without an ACC (accessory) position on the ignition key switch**
Be sure to press (OFF) on the unit for 2 seconds to turn off the clock display after turning off the engine.
Otherwise, the clock display does not turn off and this causes battery drain.



In menu mode, the currently selectable button (s) of these four are indicated with a "⇑" in the display.

18 **DISC/PRESET buttons (+/-)**
CD/MD **10, 12**
RADIO **14, 16**
TV **21**
MENU **9, 11, 12, 13, 15, 19, 20, 21, 22**
19 **SEEK buttons (- /+) 18**
CD/MD **9**
RADIO **14**
TV **22**
MENU **9, 11, 12, 13, 15, 19, 20, 21, 22**

Card remote commander RM-X114



The corresponding buttons of the card remote commander control the same functions as those on this unit.

1 **DSPL button**
2 **MENU button**
3 **SOURCE button**
4 **SEEK (⇐/⇒) buttons**
5 **SOUND button**
6 **OFF button**
7 **VOL (+/-) buttons**
8 **MODE button**
9 **LIST button**
10 **DISC/PRESET (⇑/⇓) buttons**
11 **ENTER button**
12 **ATT button**

Note
If the unit is turned off by pressing (OFF) for 2 seconds, it cannot be operated with the card remote commander unless (SOURCE) on the unit is pressed, or a disc is inserted to activate the unit first.

Tip
Refer to "Replacing the lithium battery" for details on how to replace the batteries (page 23).

Precautions

- If your car was parked in direct sunlight, allow the unit to cool off before operating it.
- Power antennas will extend automatically while the unit is operating.
- Do not use the CUSTOM FILE feature while driving, or perform any other function which could divert your attention from the road.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Moisture condensation

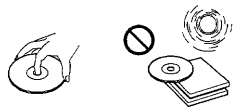
On a rainy day or in a very damp area, moisture condensation may occur inside the lenses and display of the unit. Should this occur, the unit will not operate properly. In such a case, remove the disc and wait for about an hour until the moisture has evaporated.

To maintain high sound quality

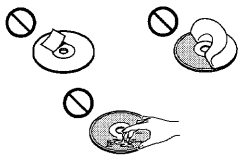
Be careful not to splash juice or other soft drinks onto the unit or discs.

Notes on discs

- To keep the disc clean, do not touch the surface. Handle the disc by its edge.
- Keep your discs in their cases or disc magazines when not in use. Do not subject the discs to heat/high temperature. Avoid leaving them in parked cars or on dashboards/rear trays.



- Do not attach labels, or use discs with sticky ink/residue. Such discs may stop spinning when used, causing a malfunction, or may ruin the disc.



- Discs with special shapes (heart-shaped discs, octagonal discs, etc.) cannot be played on this unit. Attempting to do so may damage the unit. Do not use such discs.
- You cannot play 8 cm (3 in.) CDs.
- Before playing, clean the discs with a commercially available cleaning cloth. Wipe each disc from the center out. Do not use solvents such as benzine, thinner, commercially available cleaners, or antistatic spray intended for analog discs.

Notes on CD-R discs

- You can play CD-Rs (recordable CDs) designed for audio use on this unit. Look for this mark to distinguish CD-Rs for audio use.

This mark denotes that a disc is not for audio use.

- Some CD-Rs (depending on the equipment used for its recording or the condition of the disc) may not play on this unit.
- You cannot play a CD-R that is not finalized*.

* *A process necessary for a recorded CD-R disc to be played on the audio CD player.*

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Remove the front panel and press the RESET button with a pointed object, such as a ball-point pen.

Note
Pressing the RESET button will erase the clock setting and some stored contents.

Detaching the front panel

You can detach the front panel of this unit to protect the unit from being stolen.

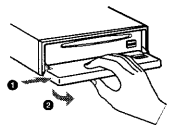
Caution alarm

If you turn the ignition switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds.
If you connect an optional amplifier and do not use the built-in amplifier, the beep sound will be deactivated.

1 **Press (OFF)*.**
CD/MD playback or radio reception stops (the key illumination and display remain on).

* *If your car has no ACC position on the ignition switch, be sure to turn the unit off by pressing (OFF) for 2 seconds to avoid car battery drain.*

2 **Press (OPEN), then slide the front panel to the right, and gently pull out the left end of the front panel.**

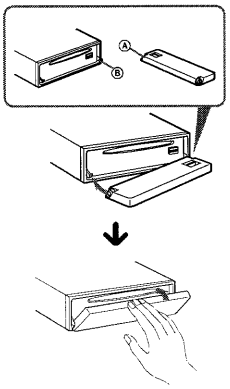


Notes
- *If you detach the panel while the unit is still turned on, the power will turn off automatically to prevent the speakers from being damaged.*
- *Do not drop or put excessive pressure on the front panel and its display window.*
- *Do not subject the front panel to heat/high temperature or moisture. Avoid leaving it in parked cars or on dashboards/rear trays.*

Tip
When carrying the front panel with you, use the supplied front panel case.

Attaching the front panel

Place hole Ⓐ of the front panel onto the spindle Ⓑ on the unit, then lightly push the left side in.
Press (SOURCE) (or insert a CD) to operate the unit.



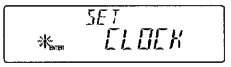
Note
Do not put anything on the inner surface of the front panel.

Setting the clock

The clock uses a 12-hour digital indication.

Example: To set the clock to 10:08

1 **Press (MENU), then press either side of (DISC/PRESET) repeatedly until "CLOCK" appears.**



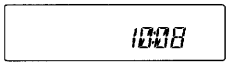
❶ **Press (ENTER).**
The hour indication flashes.

❷ **Press either side of (DISC/PRESET) to set the hour.**

❸ **Press the (+) side of (SEEK).**
The minute indication flashes.

❹ **Press either side of (DISC/PRESET) to set the minute.**

2 **Press (ENTER).**



The clock starts. After the clock setting is completed, the display returns to normal play mode.

Tip
When D.INFO mode is set to ON, the time is always displayed (page 18).

CD Player CD/MD Unit (optional)

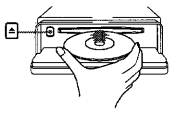
In addition to playing a CD with this unit, you can also control external CD/MD units.

Note
If you connect an optional CD unit with the CD TEXT function, the CD TEXT information will appear in the display when you play a CD TEXT disc.

Playing a disc

(With this unit)

1 **Press (OPEN) and insert the disc (labeled side up).**



2 **Close the front panel.**
Playback starts automatically.

If a disc is already inserted, press (SOURCE) repeatedly until "CD" appears to start playback.

To	Press
Stop playback	(OFF)
Eject the disc	(OPEN) then ⏏
Skip tracks - Automatic Music Sensor	(SEEK) (⏮/⏭) [once for each track]
Fast-forward/ reverse - Manual Search	(SEEK) (◀◀/▶▶) [hold to desired point]

Notes
- *When the last track on the disc is over, playback restarts from the first track of the disc.*
- *With optional unit connected, playback of the same source will continue on to the optional CD/MD unit.*

continue to next page →

(With optional unit)

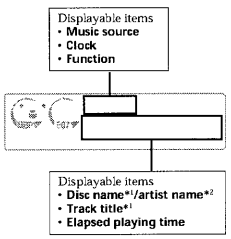
1 **Press (SOURCE) repeatedly to select "CD" or "MD."**

2 **Press (MODE) repeatedly until the desired unit appears.**
Playback starts.

To	Press
Skip discs - Disc selection	(DISC/PRESET) (+/-)

Display items

When the disc/track changes, any prerecorded title of the new disc/track is automatically displayed (If the Auto Scroll function is set to "ON," names exceeding 8 characters will be scrolled (page 18)).



To	Press
Switch display item	(DSPL)

*1 *"NO NAME" indicates there is no Disc Memo (page 11) or prerecorded name to display.*
*2 *Only for CD TEXT discs with the artist name.*

Notes
- *Some characters cannot be displayed.*
- *For some CD TEXT discs with very many characters, information may not scroll.*
- *This unit cannot display the artist name for each track of a CD TEXT disc.*

Playing tracks repeatedly

- Repeat Play

The disc in the main unit will repeat a track or the entire disc when it reaches the end. For repeat play, you can select:
- REP-1 - to repeat a track.
- REP-2* - to repeat a disc.

* *Available only when one or more optional CD/MD units are connected.*

During playback, press ① (REP) repeatedly until the desired setting appears in the display.
Repeat Play starts.

To return to normal play mode, select "REP-OFF."

Playing tracks in random order - Shuffle Play

You can select:
- SHUF-1 - to play the tracks on the current disc in random order.
- SHUF-2*1 - to play the tracks in the current optional CD (MD) unit in random order.
- SHUF-ALL*2 - to play all the tracks in all the connected CD (MD) units (including this unit) in random order.

*1 *Available only when one or more optional CD (MD) units are connected.*
*2 *Available only when one or more optional CD units, or two or more optional MD units are connected.*

During playback, press ② (SHUF) repeatedly until the desired setting appears in the display.
Shuffle Play starts.

To return to normal play mode, select "SHUF-OFF."

Note
"SHUF-ALL" will not shuffle tracks between a CD player and an MD player.

Labeling a CD - Disc Memo

(For a CD unit with the CUSTOM FILE function)

You can label each disc with a custom name (Disc Memo). You can enter up to 8 characters for a disc. If you label a CD, you can locate the disc by name (page 12).

Caution

Do not use the CUSTOM FILE feature while driving, or perform any other function which could divert your attention from the road.

1 **Start playing the disc you want to label.**

2 **Press (MENU), then press either side of (DISC/PRESET) repeatedly until "NAMEEDIT" appears.**

3 **Press (ENTER).**

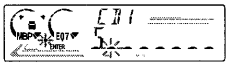
The unit will repeat the disc during the labeling procedure.

4 **Enter the characters.**

❶ **Press the (+)*1 side of (DISC/PRESET) repeatedly to select the desired character.**
A → B → C - → 0 → 1 → 2 - → + → - → * - → _*3 → A

*1 *For reverse order, press the (-) side of (DISC/PRESET).*
*3 *(blank space)*

❷ **Press the (+) side of (SEEK) after locating the desired character.**



If you press the (-) side of (SEEK), you can move back to the left.

❸ **Repeat steps ❶ and ❷ to enter the entire name.**

5 **To return to normal CD play mode, press (ENTER).**

Tips
- *Simply overwrite or enter "_" to correct or erase a name.*
- *There is another way to start labeling a CD: Press (LIST) for 2 seconds instead of performing steps 2 and 3. You can also complete the operation by pressing (LIST) for 2 seconds instead of step 5.*
- *You can label CDs on a unit without the CUSTOM FILE function if that unit is connected along with a CD unit that has the function. The Disc Memo will be stored in the memory of the CD unit with the CUSTOM FILE function.*

Note
REP-1/shuffle play is suspended until the Name Edit is complete.

Viewing the Disc Memo

As a display item, the Disc Memo always takes priority over any original CD TEXT information.

To	Press
View	(DSPL) during CD/CD TEXT disc playback

Tip
To find out about other items that can be displayed, see page 10.

Erasing the Disc Memo

1 **Press (SOURCE) repeatedly to select "CD."**

2 **Press (MODE) repeatedly to select the CD unit storing the Disc Memo.**

3 **Press (MENU), then press either side of (DISC/PRESET) repeatedly until "NAME DEL" appears.**

4 **Press (ENTER).**
The stored names will appear in order from the earliest entered.

5 **Press either side of (DISC/PRESET) repeatedly to select the disc name you want to erase.**
The stored names will appear from the earliest ones entered.

6 **Press (ENTER) for 2 seconds.**
The name is erased.
Repeat steps 5 and 6 if you want to erase other names.

continue to next page →

7 Press (MENU) twice.
The unit returns to normal CD play mode.

Notes
- *When the Disc Memo for a CD TEXT disc is erased, the original CD TEXT information is displayed.*
- *If you cannot find the Disc Memo you want to erase, try selecting a different CD unit in step 2.*

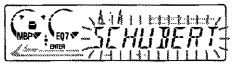
Locating a disc by name

- List-up (For a CD unit with the CD TEXT/ CUSTOM FILE function, or an MD unit)

You can use this function for discs that have been assigned custom names*1 or for CD TEXT discs*2.

*1 *Locating a disc by its custom name: when you assign a name for a CD (page 11) or an MD.*
*2 *Locating discs by the CD TEXT information: when you play a CD TEXT disc on a CD unit with the CD TEXT function.*

1 Press (LIST).
The name assigned to the current disc appears in the display.



2 Press either side of (DISC/PRESET) repeatedly until you find the desired disc.

3 Press (ENTER) to play the disc.

Note
Some letters cannot be displayed (exception: Disc Memo).

Selecting specific tracks for playback

- Bank (For a CD unit with the CUSTOM FILE function)

If you label the disc, you can set the unit to skip or play the tracks of your choice.

1 Start playing the disc you want to label.

2 Press (MENU), then press either side of (DISC/PRESET) repeatedly until "BANK SEL" appears.

3 Press (ENTER).

4 Label the tracks.
❶ Press either side of (SEEK) repeatedly to select the track you want to label.

❷ Press (ENTER) repeatedly to select "PLAY" or "SKIP."

5 Repeat step 4 to set "PLAY" or "SKIP" for all the tracks.

6 Press (MENU) twice.
The unit returns to normal CD play mode.

Notes
- *You can set "PLAY" and "SKIP" for up to 24 tracks.*
- *You cannot set "SKIP" for all the tracks on a CD.*

Playing specific tracks only
You can select:
- BANK-ON - to play the tracks with the "PLAY" setting.
- BANK-INV (Inverse) - to play the tracks with the "SKIP" setting.

1 During playback, press (MENU), then press either side of (DISC/PRESET) repeatedly until "BANK-ON," "BANK-INV," or "BANK-OFF" appears.

2 Press the (+) side of (SEEK) repeatedly until the desired setting appears.
BANK-ON → BANK-INV → BANK-OFF → BANK-ON

3 Press (ENTER).
Playback starts from the track following the current one.

To return to normal play mode, select "BANK-OFF" in step 2.

Radio

The unit can store up to 6 stations per band (FM1, FM2, FM3, AM1, and AM2).

Caution
When tuning in stations while driving, use Best Tuning Memory to prevent accidents.

Storing stations automatically

- Best Tuning Memory (BTM)

The unit selects the stations with the strongest signals within the selected band, and stores them in the order of their frequency.

1 Press (SOURCE) repeatedly to select the radio.

2 Press (MODE) repeatedly to select the band.

3 Press (MENU), then press either side of (DISC/PRESET) repeatedly until "BTM" appears.

4 Press (ENTER).
A beep sounds when the setting is stored.

Notes
- *If only a few stations can be received due to weak signals, some number buttons will retain their former settings.*
- *When a number is indicated in the display, the unit starts storing stations from the one currently displayed.*

Receiving the stored stations

1 Press (SOURCE) repeatedly to select the radio.

2 Press (MODE) repeatedly to select the band.

3 Press the number button (① to ⑥) on which the desired station is stored.

Tip
Press either side of (DISC/PRESET) to receive the stations in the order they are stored in the memory (Preset Search function).

If preset tuning does not work

Press either side of (SEEK) to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Repeat until the desired station is received.

Tips
- *If automatic tuning stops too frequently, turn on the Local Seek to limit seek to stations with stronger signals (see "Changing the sound and display settings," page 18).*
- *If you know the frequency of the station you want to listen to, press and hold either side of (SEEK) to locate the approximate frequency, then press (SEEK) repeatedly to fine adjust to the desired frequency (manual tuning).*

If FM stereo reception is poor

Select monaural reception mode.
(see "Changing the sound and display settings," page 18).
The sound improves, but becomes monaural ("ST" disappears).

Note
If interference occurs, this unit will automatically narrow the reception frequency to eliminate noise (IF AUTO function). In such cases, some FM stereo broadcasts may become monaural while in the stereo reception mode.

Tip
To always hear FM stereo broadcasts in stereo, you can change the IF AUTO setting and widen the frequency signal reception (see "Changing the sound and display settings," page 18). Note that some interference may occur in this setting.

Storing only the desired stations

You can manually preset the desired stations on any chosen number button.

1 Press (SOURCE) repeatedly to select the radio.

2 Press (MODE) repeatedly to select the band.

3 Press either side of (SEEK) to tune in the station that you want to store.

4 Press the desired number button (① to ⑥) for 2 seconds until "MEM" appears.
The number button indication appears in the display.

Note
If you try to store another station on the same number button, the previously stored station will be erased.

Storing station names

- Station Memo

You can assign a name to each radio station and store it in memory. The name of the station currently tuned in appears in the display. You can assign a name using up to 8 characters for a station.

Storing the station names

1 Tune in a station whose name you want to store.

2 Press (MENU), then press either side of (DISC/PRESET) repeatedly until "NAMEEDIT" appears.

3 Press (ENTER).

4 Enter the characters.
❶ Press the (+)*1 side of (DISC/PRESET) repeatedly to select the desired character.
A → B → C → 0 → 1 → 2 → + → - → * → _*2 → A

*1 *For reverse order, press the (-) side of (DISC/PRESET).*
*2 *(blank space)*

❷ Press the (+) side of (SEEK) after locating the desired character.

If you press the (-) side of (SEEK), you can move back to the left.

❸ Repeat steps ❶ and ❷ to enter the entire name.

5 Press (ENTER).

Tips
- *Simply overwrite or enter "_" to correct or erase a name.*
- *There is another way to start storing station names: Press (LIST) for 2 seconds instead of performing steps 2 and 3. You can also complete the operation by pressing (LIST) for 2 seconds instead of step 5.*

Displaying the station name

Switch the display item to frequency or station name*.

To	Press
Switch display item	(DSPL) during radio reception

** If the station name is not stored, "NO NAME" appears in the display for one second.*

Erasing the station name

1 During radio reception, press (MENU), then press either side of (DISC/PRESET) repeatedly until "NAME DEL" appears.

2 Press (ENTER).

3 Press either side of (DISC/PRESET) repeatedly to select the station whose name you want to erase.

4 Press (ENTER) for 2 seconds.
The name is erased.
Repeat steps 3 to 4 if you want to erase other names.

5 Press (MENU) twice.
The unit returns to normal radio reception mode.

Note
If you have already erased all of the station names, "NO DATA" appears in step 4.

Locating a station by name - List-up

1 During radio reception, press (LIST).
The name assigned to the station currently tuned appears in the display.

2 Press either side of (DISC/PRESET) repeatedly until you find the desired station.
If no name is assigned to the selected station, the frequency appears in the display.

3 Press (ENTER) to tune in the desired station.

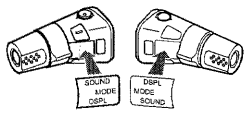
Note
If you have a TV tuner connected, the list-up indication will not appear in the display.

Other Functions

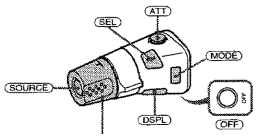
You can also control the unit with a rotary commander **(optional)**.

Using the rotary commander

First, attach the appropriate label depending on how you want to mount the rotary commander.
The rotary commander works by pressing buttons and/or rotating controls.



By pressing buttons

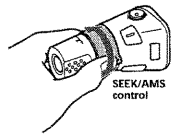


Rotate the VOL control to adjust the volume.

Press	To
(SOURCE)	Change source (radio/CD/MD*1/TV*1)
(MODE)	Change operation (radio band/CD unit/ MD unit*1/TV*1/Video*1)
(ATT)	Attenuate sound
(OFF)*2	Stop playback or radio reception
(SOUND)	Adjust the sound menu
(DSPL)	Change the display item

*1 *Only if the corresponding optional equipment is connected.*
*2 *If your car has no ACC (accessory) position on the ignition key switch, be sure to press (OFF) for 2 seconds to turn off the clock indication after turning off the ignition.*

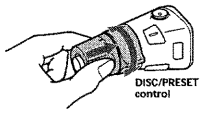
By rotating the control



Rotate and release to:
- Skip tracks.
- Tune in stations automatically.

Rotate, hold, and release to:
- Fast-forward/reverse a track.
- find a station manually.

By pushing in and rotating the control

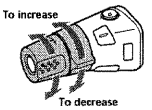


Push in and rotate the control to:
- Receive preset stations.
- Change the disc*.

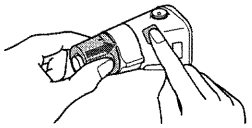
** When an optional CD/MD unit is connected.*

Changing the operative direction

The operative direction of controls is factory-set as shown below.



If you need to mount the rotary commander on the right hand side of the steering column, you can reverse the operative direction.



Press (SOUND) for 2 seconds while pushing the VOL control.

Adjusting the sound characteristics

You can adjust the bass, treble, balance, and fader.
The bass and treble levels can be stored independently for each source.

1 Select the item you want to adjust by pressing (SOUND) repeatedly.
Each time you press (SOUND), the item changes as follows:

BAS (bass) → TRE (treble) →
BAL (left-right) → FAD (front-rear)

2 Adjust the selected item by pressing either side of (SEEK).
When adjusting with the rotary commander, press (SOUND) and rotate the VOL control.

Note
Adjust within 3 seconds after selecting the item.

Quickly attenuating the sound

(With the rotary commander or the card remote commander)

Press (ATT) on the rotary commander or card remote commander.
After "ATT-ON" momentarily appears, the "ATT" appears in the display.

To restore the previous volume level, press (ATT) again.

Changing the sound and display settings - Menu

The following items can be set:

SET (Set Up)

- CLOCK (page 9)
- BEEP - to turn the beeps on or off.
- RM (Rotary Commander) - to change the operative direction of the controls of the rotary commander.
  - Select "NORM" to use the rotary commander as the factory-set position.
  - Select "REV" when you mount the rotary commander on the right side of the steering column.
- P.OUT-4.0V/P.OUT-5.5V - to change the pre-out of the power amplifier to 4.0 V or 5.5 V. Selectable only when the unit is turned off. (CDX-CA660X only)

Note
If the volume is turned up very high when connected to a power amplifier, the sound may be distorted. In this case, set P.OUT to "4.0V."

DSPL (Display)

- D.INFO (Dual Information) - to display the clock and the play mode at the same time (ON).
- M.DSPL (Motion Display) - to select the Motion Display mode from "1," "2," and "OFF."
  - Select "1" to show decoration lines in the display and activate Demo display.
  - Select "2" to show decoration lines in the display and deactivate Demo display.
  - Select "OFF" to deactivate the Motion Display.
- A.SCRL (Auto Scroll)
  - Select "ON" to scroll all automatically displayed names exceeding 8 characters.
  - When Auto scroll is set to off and the disc/track name is changed, the disc/ track name does not scroll.

SND (Sound)

- LOUD (Loudness) - to enjoy bass and treble even at low volumes. The bass and treble will be reinforced.

P/M (Play Mode)

- LOCAL-ON/OFF (Local seek mode) (page 14)
  - Select "ON" to only tune into stations with stronger signals.
- MONO-ON/OFF* (Monaural mode) (page 14)
  - Select "ON" to hear FM radio/TV stereo broadcast in monaural. Select "OFF" to return to normal mode.
- IF AUTO/WIDE (page 14)

** This function cannot change the TV sound setting if the optional TV tuner XT-40V is connected.*

1 Press (MENU).
To set A.SCRL, press (MENU) during CD/ MD Playback.

2 Press either side of (DISC/PRESET) repeatedly until the desired item appears.

3 Press the (+) side of (SEEK) to select the desired setting (Example: ON or OFF).

4 Press (ENTER).
After the mode setting is completed, the display returns to normal play mode.

Note
The displayed item will differ depending on the source.

Tip
You can easily switch among categories ("SET," "DSPL," "SND," "P/M," and "EDIT") by pressing either side of (DISC/PRESET) for 2 seconds.

Selecting the sound position

- "My Best sound Position (MBP)"

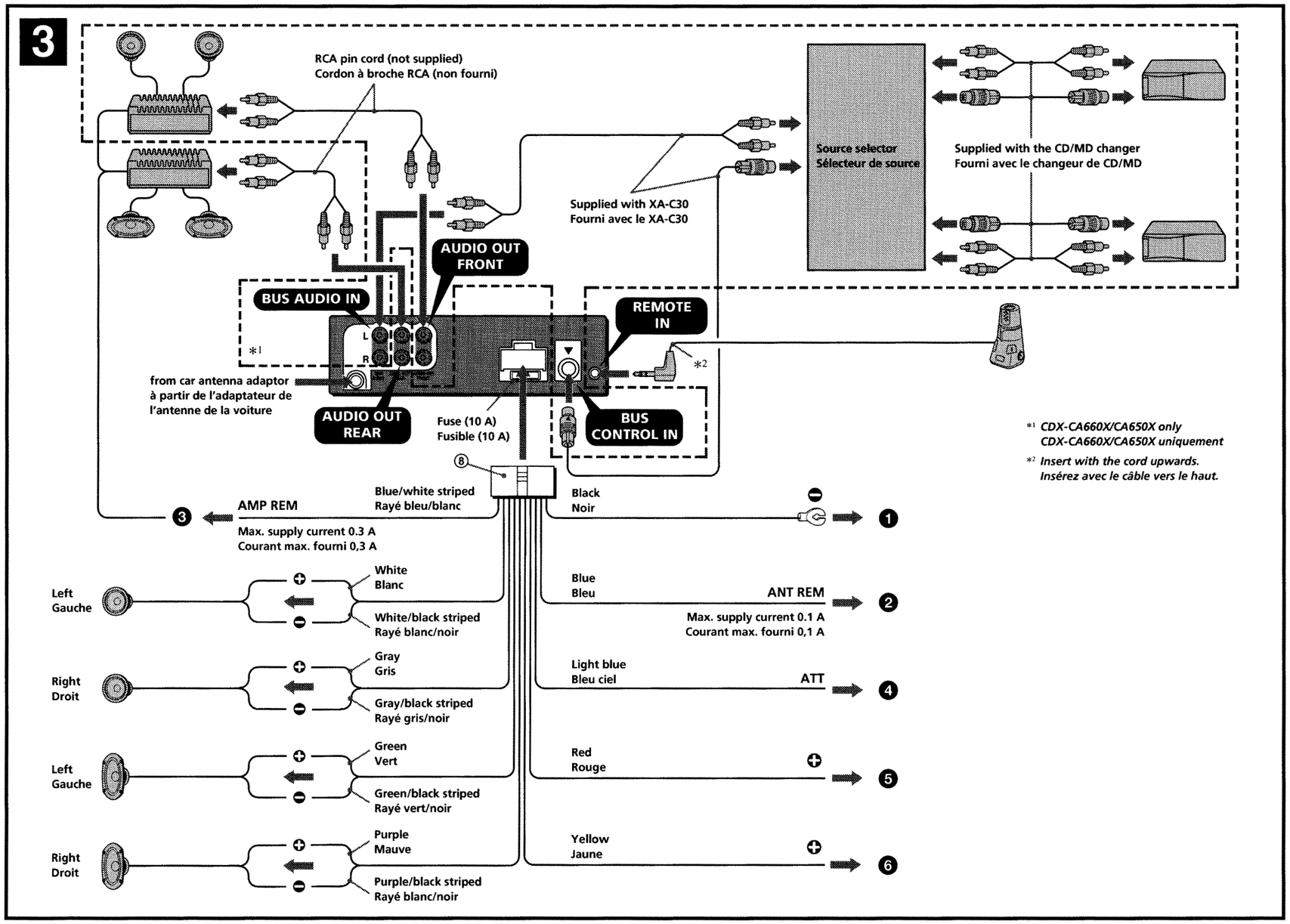
When you drive without passengers, you can enjoy the most comfortable sound environment with "My Best sound Position." "My Best sound Position" has two presets, which adjust the sound level of balance and fader. You can select one very easily with the MBP button.

Display window	Balance Level		Fader Level	
	Right	Left	Front	Rear
MBP-A	- 4dB	0	0	- 4dB
MBP-B	0	- 4dB	0	- 4dB
MBP-OFF	0	0	0	0

Press (MBP) repeatedly for the desired listening position.
The mode of "My Best sound Position" is shown in the display in order of the table.

After one second, the display goes back to the normal playback mode.
If you want to adjust the sound level of balance and fader more precisely, you can do it using the (SOUND) button. (See "Adjusting the sound characteristics" on page 18.)

Notes
- *When the BAL (balance) or FAD (fader) in "Adjusting the sound characteristics" (page 18) is adjusted, the MBP setting returns to OFF.*
- *When MBP is set to OFF, the BAL and FAD setting is activated.*



Connection diagram (3)

1. **To a metal surface of the car**
   First connect the black ground lead, then connect the yellow and red power input leads.
2. **To the power antenna control lead or power supply lead of antenna booster amplifier**
   Notes
   - *It is not necessary to connect this lead if there is no power antenna or antenna booster, or with a manually-operated telescopic antenna.*
   - *When your car has a built-in FM/AM antenna in the rear/side glass, see "Notes on the control and power supply leads."*
3. **To AMP REMOTE IN of an optional power amplifier**
   This connection is only for amplifiers. Connecting any other system may damage the unit.
4. **To the interface cable of a car telephone**
5. **To the +12 V power terminal which is energized in the accessory position of the ignition key switch**
   Notes
   - *If there is no accessory position, connect to the +12 V power (battery) terminal which is energised at all times.*
     Be sure to connect the black ground lead to it first.
   - *When your car has a built-in FM/AM antenna in the rear/side glass, see "Notes on the control and power supply leads."*
6. **To the +12 V power terminal which is energised at all times**
   Be sure to connect the black ground lead to it first.

Notes on the control and power supply leads
- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner.*
- *When your car has built-in FM/AM antenna in the rear/side glass, connect the power antenna control lead (blue) or the accessory power input lead (red) to the power terminal of the existing antenna booster. For details, consult your dealer.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities to avoid its damage.*
- *Do not connect the speaker terminals to the car chassis, or connect the terminals of the right speakers with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Connect only passive speakers. Connecting active speakers (with built-in amplifiers) to the speaker terminals may damage the unit.*

Cautions

- This unit is designed for negative ground 12 V DC operation only.
- Do not get the wires under a screw, or caught in moving parts (e.g. seat railing).
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- **Run all ground wires to a common ground point.**
- Be sure to insulate any loose unconnected wires with electrical tape for safety.

Notes on the power supply cord (yellow)
- When connecting this unit in combination with other stereo components, the connected car circuit's rating must be higher than the sum of each component's fuse.
- When no car circuits are rated high enough, connect the unit directly to the battery.

SECTION 2
DISASSEMBLY

Note : This equipiment can be removed usiing the following procedure.

Set → Sub Panel (CD) Assy → CD Mechanism Block → Main Board → Heat Sink (Main)

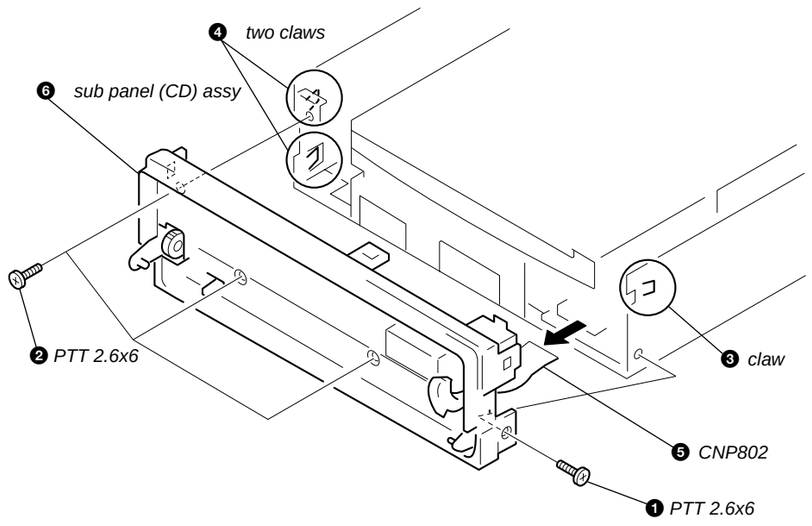
Chassis (T) Sub Assy → Lever Section → Arm Roller Assy

Servo Board

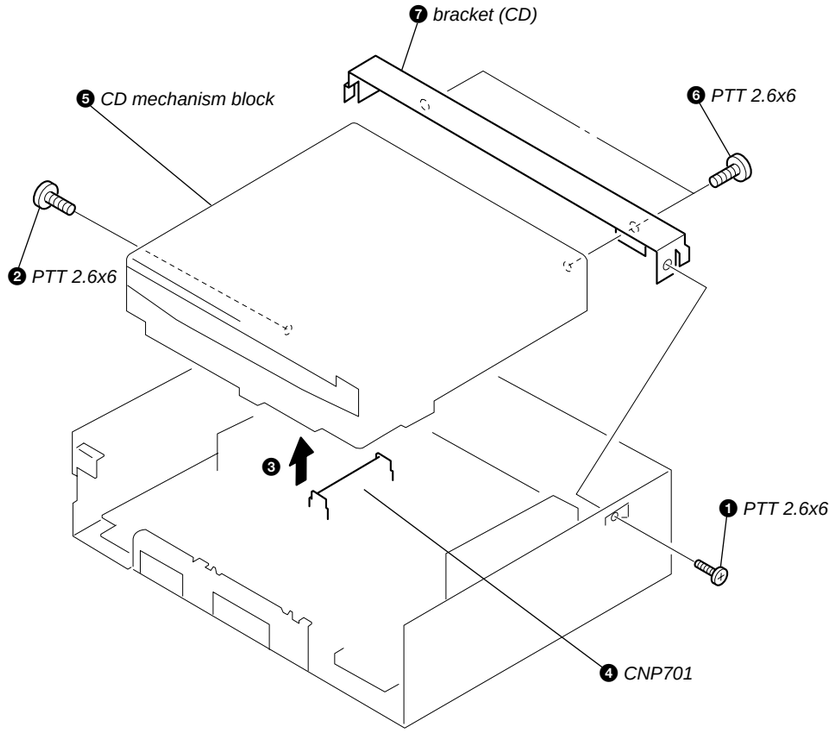
Floating Block Assy → Optical Pick-up Block

Note : Follow the disassembly procedure in the numerical order given.

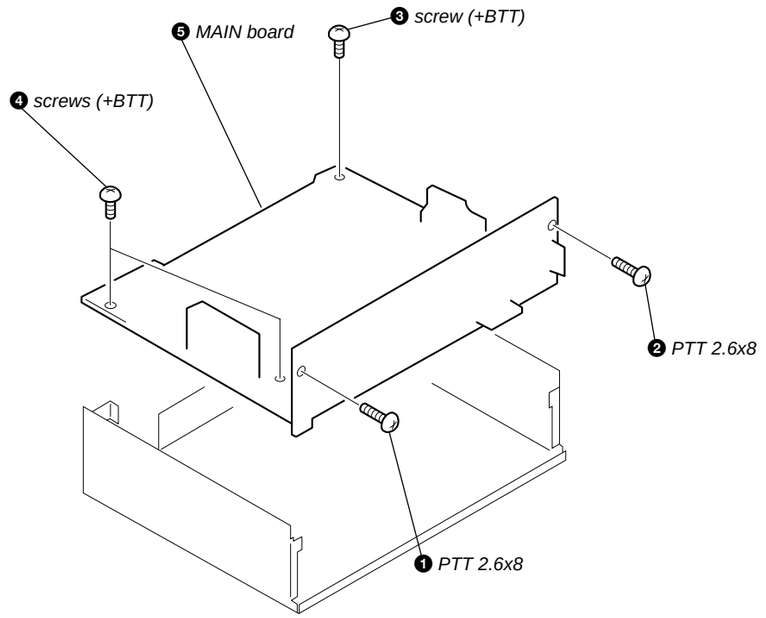
2-1. SUB PANEL (CD) ASSY



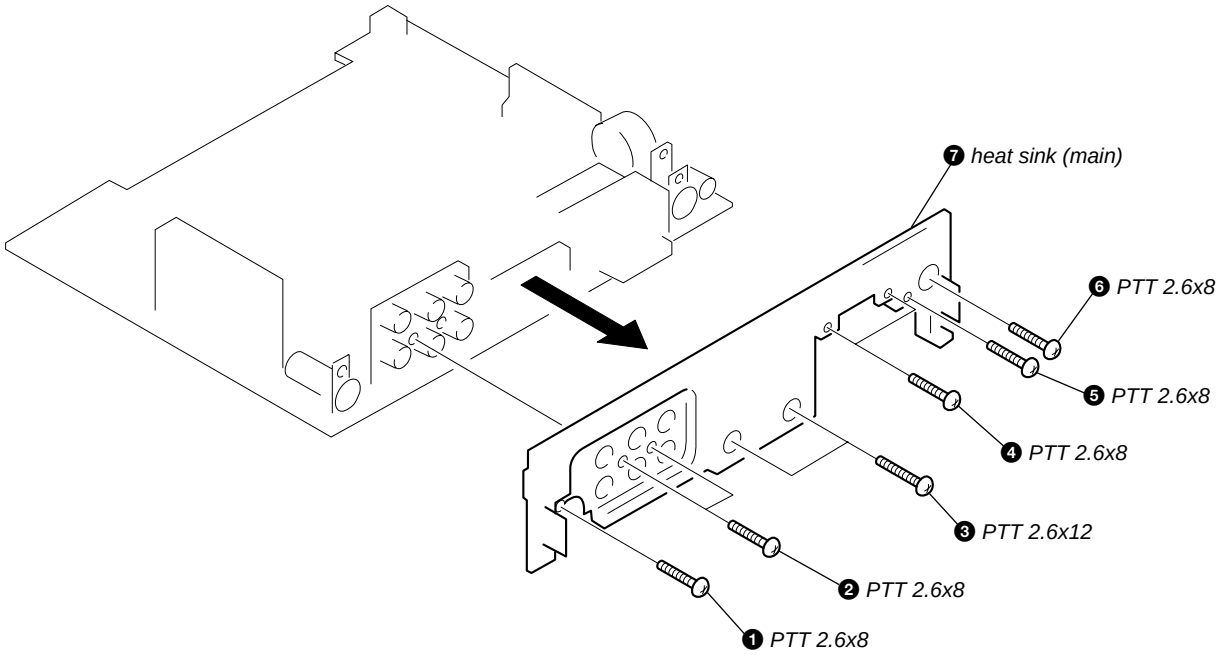
2-2. CD MECHANISM BLOCK



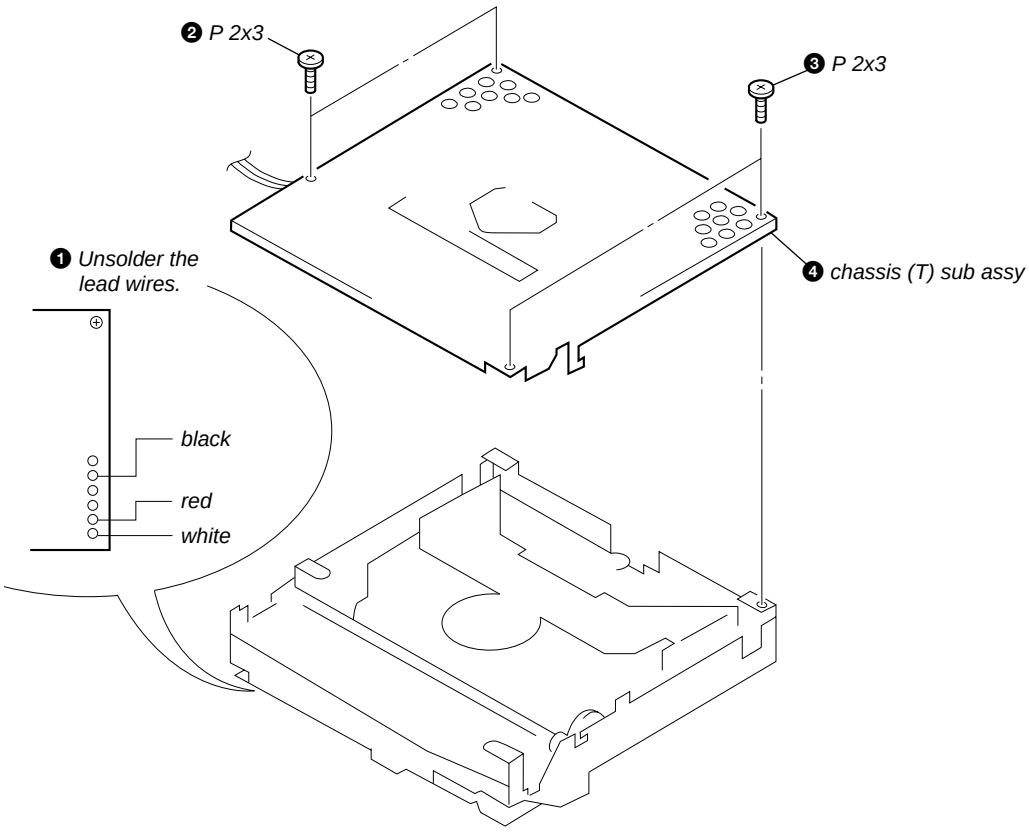
2-3. MAIN BOARD



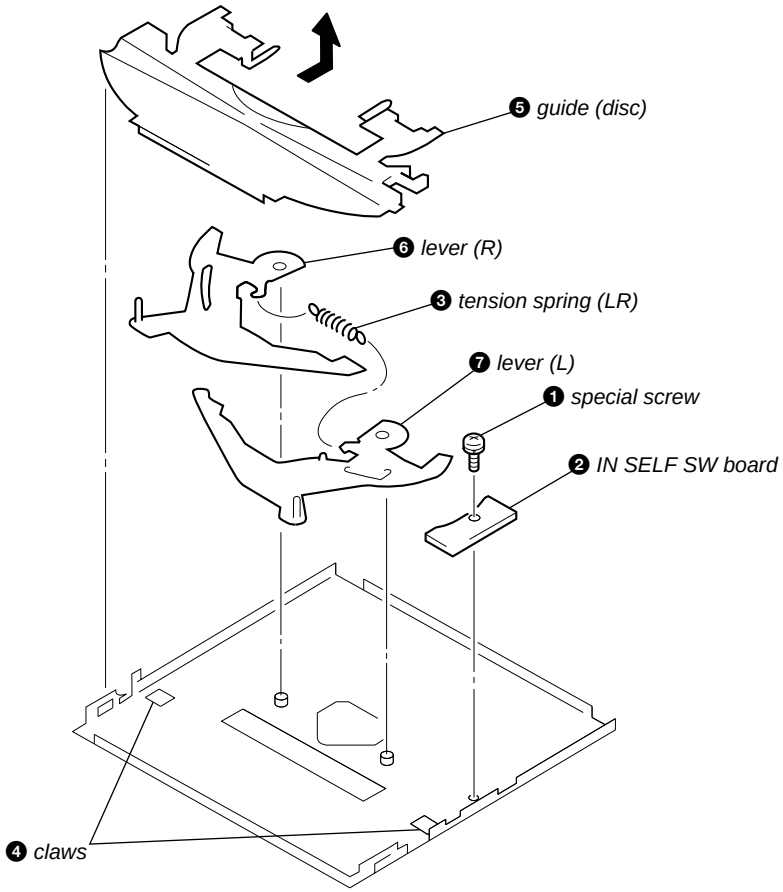
2-4. HEAT SINK (MAIN)



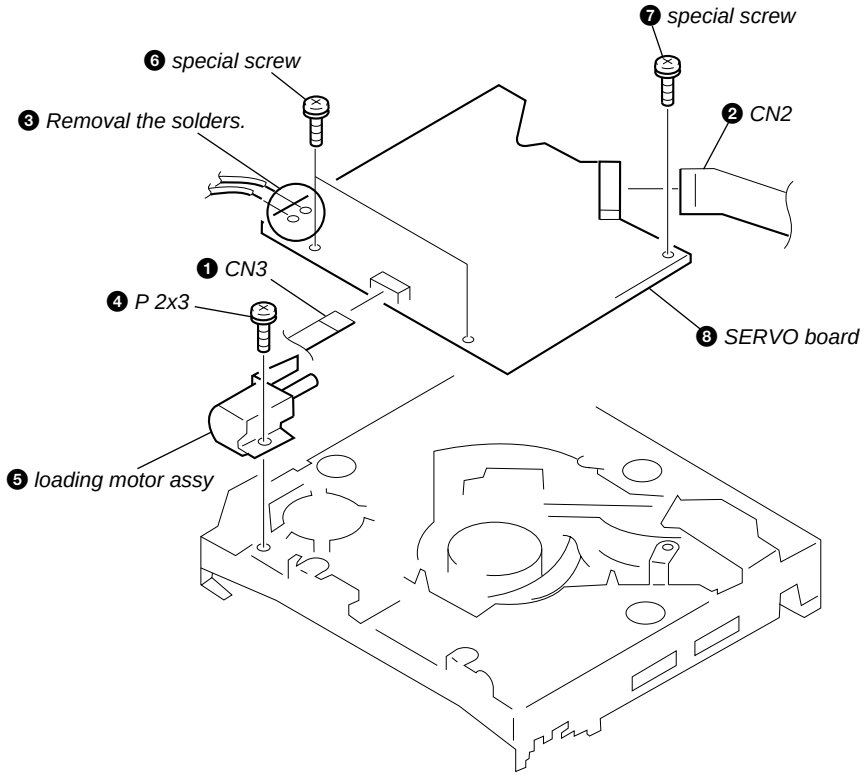
2-5. CHASSIS (T) SUB ASSY



2-6. LEVER SECTION



2-7. SERVO BOARD



2-8. ARM ROLLER ASSY

• When installing, take note of the positions arm (roller) and washers. (Fig. 1)

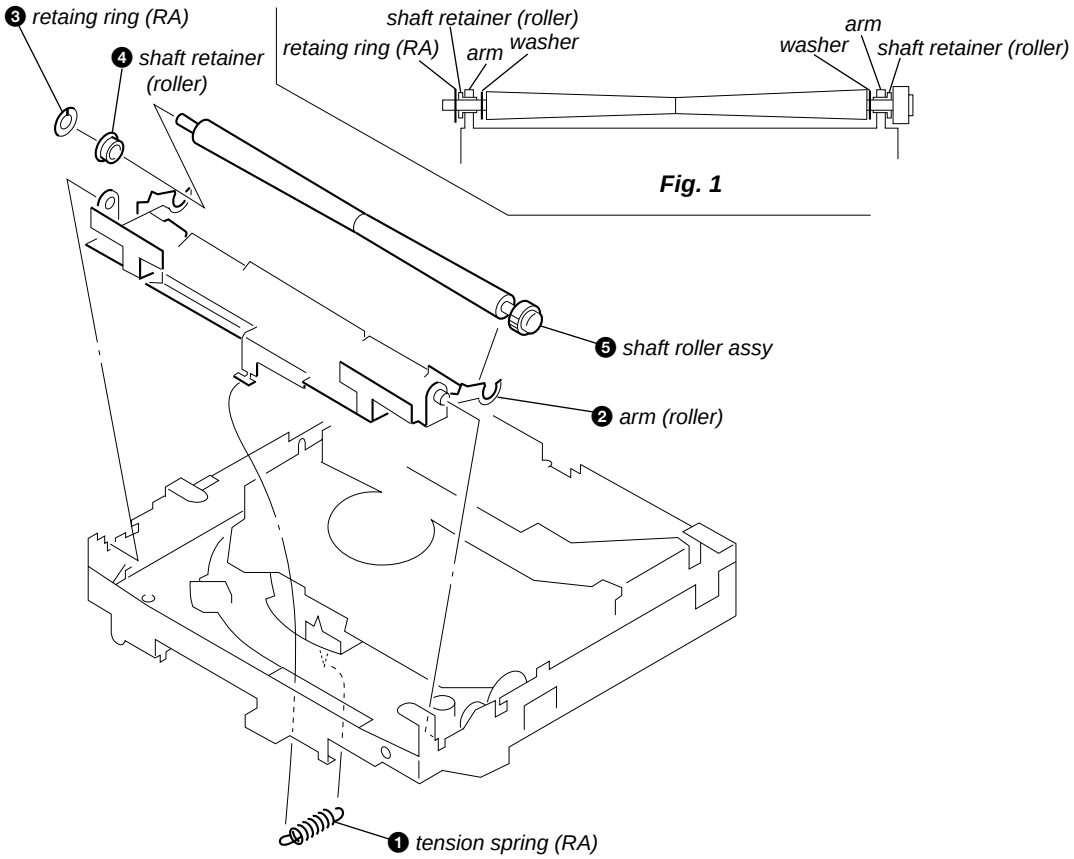
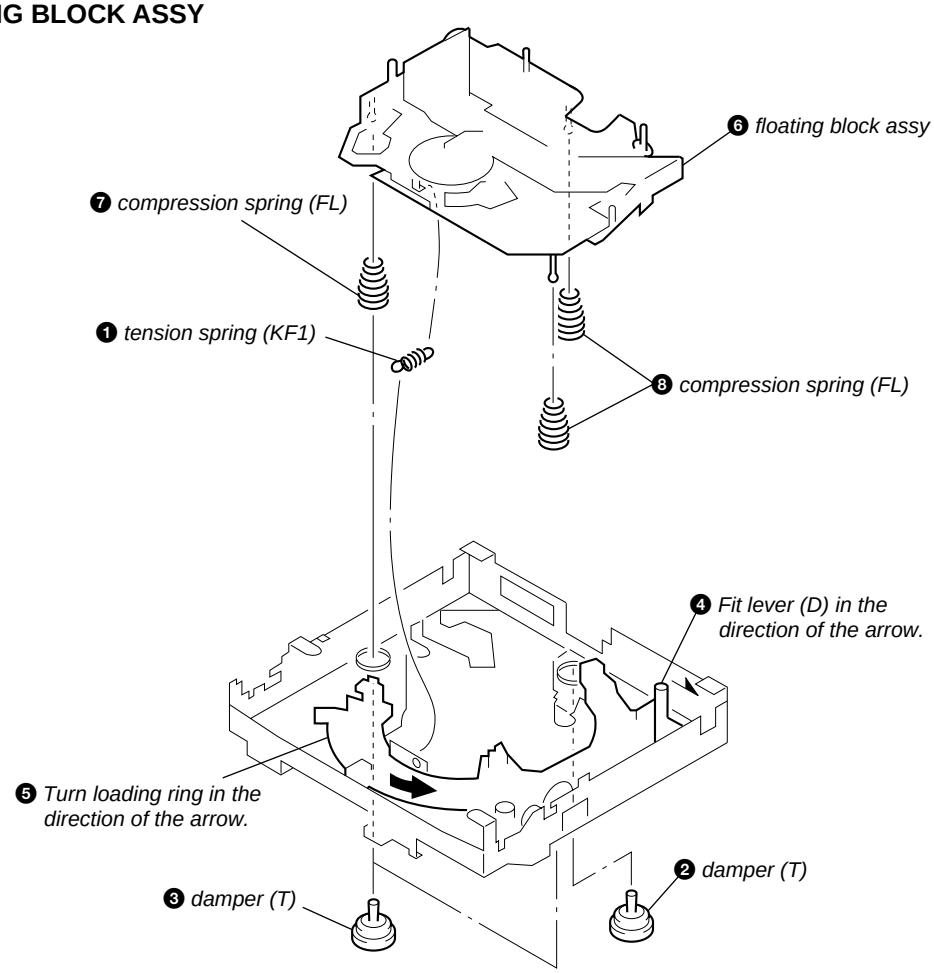
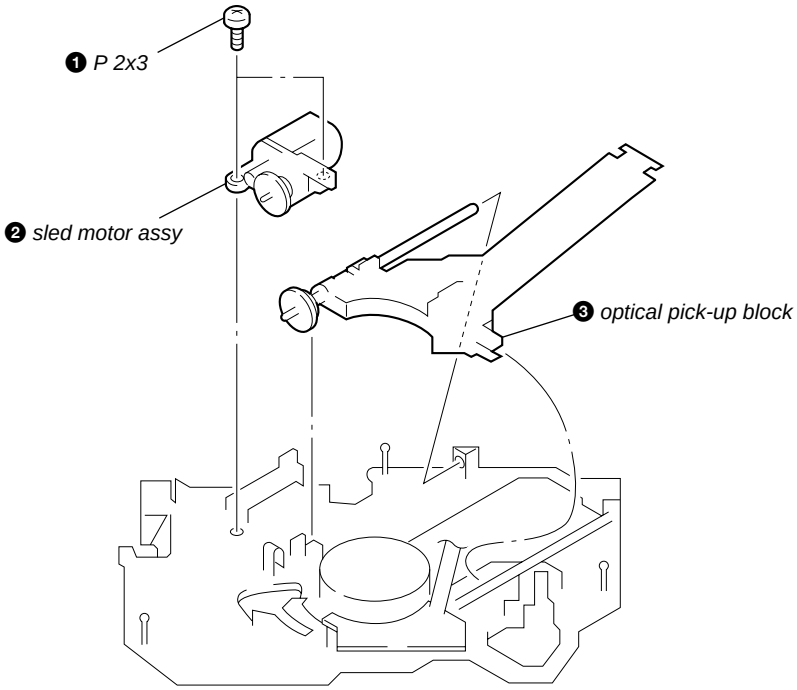


Fig. 1

2-9. FLOATING BLOCK ASSY


❻ floating block assy
❼ compression spring (FL)
❶ tension spring (KF1)
❽ compression spring (FL)
❹ Fit lever (D) in the direction of the arrow.
❺ Turn loading ring in the direction of the arrow.
❷ damper (T)
❸ damper (T)

2-10. OPTICAL PICK-UP BLOCK



SECTION 3
DIAGRAMS

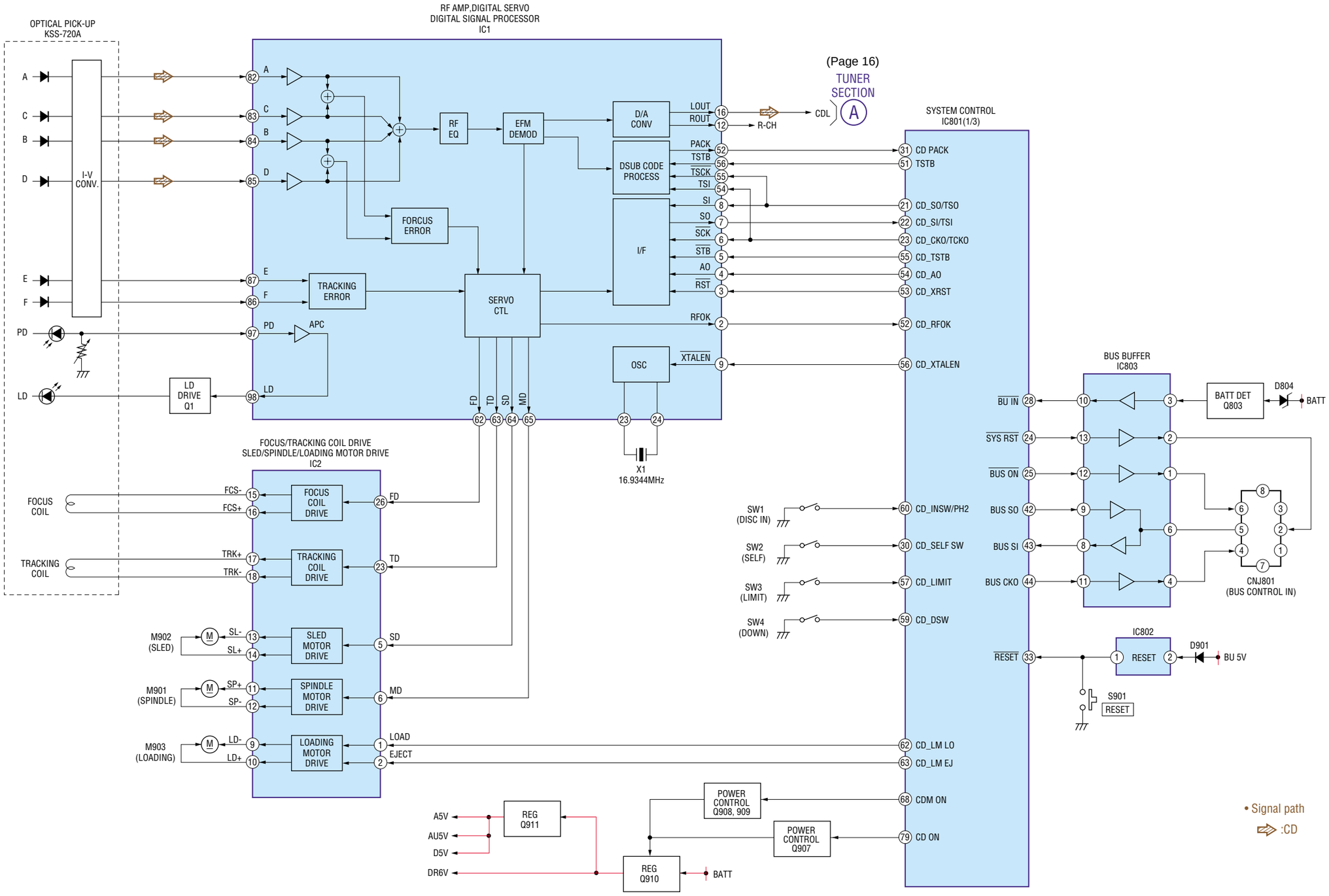
3-1. IC PIN DESCRIPTION

• IC801 MN101C49KTG1 (SYSTEM CONTROL)

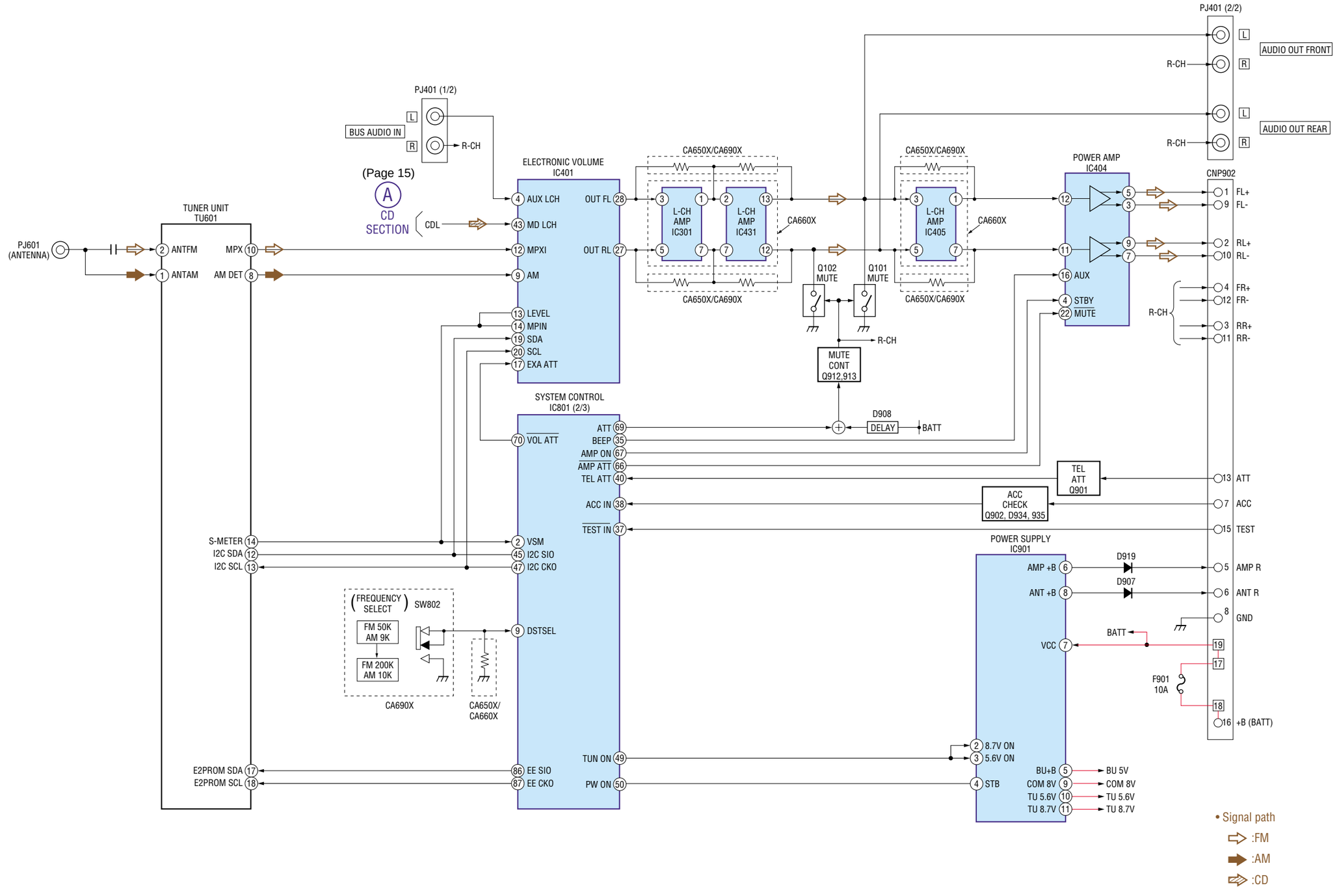
Pin No.	Pin Name	I/O	Pin Description
1	VREF–	—	Ground for A/D converter power supply
2	VSM	I	S-meter voltage detection signal input from tuner unit (TU601)
3	NIL	I	Connect to ground.
4	KEYIN1	I	Key signal input
5	KEYIN0	I	Key signal input
6	RC IN0	I	Rotary commander key signal input from remote in jack (CNP801)
7, 8	NIL	I	Not used. (Connect to ground.)
9	DSTSEL	I	Destination set up detection signal input (“L”: CDX-CA650X/CA660X, “H”: CDX-CA690X)
10	VREF+	—	A/D converter power supply
11	VDD	—	Power supply (+5 V) input pin
12	OSCOUT	O	High speed clock signal output (18.432 MHz)
13	OSCIN	I	High speed clock signal input (18.432 MHz)
14	VSS	—	Ground for power supply
15	XIN	I	Low speed clock signal input (32.768 kHz)
16	XOUT	O	Low speed clock signal output (32.768 kHz)
17	MMOD	I	Memory mode select signal input (Input to “Low” (single chip mode).) (Connect to ground.)
18	LCDSO	O	LCD serial data signal output to LCD driver (IC501)
19	LCDCE	O	LCD chip enable signal output to LCD driver (IC501)
20	LCDCKO	O	LDC serial clock signal output to LCD driver (IC501)
21	CD SO/TSO	O	CD servo IC serial data signal output
22	CD SI/TSI	I	CD servo IC serial data signal input
23	CD CKO/TCKO	O	CD servo IC serial clock signal output
24	$\overline{\text{SYSRST}}$	O	System reset signal output to bus interface (IC803)
25	$\overline{\text{BUS ON}}$	O	Bus on signal output to bus interface (IC803)
26	KEYACK	I	Key acknowledge detection signal input
27	NIL	I	Not used. (Connect to ground.)
28	$\overline{\text{BU IN}}$	I	Back up current detection signal input
29	SIRCS	I	Remote signal input from remote control receiver (IC502)
30	CD SELFSW	I	CD mechanism self load position detection switch signal input from self switch (SW2)
31	CD PACK	I	CD text pack sync signal input from CD servo (IC1)
32	NIH	I	Connect to power supply.
33	$\overline{\text{RESET}}$	I	microcomputer reset signal input from reset IC (IC802) “L”: reset
34	$\overline{\text{NOSE SW}}$	I	Front panel attachment detection signal input from nose detect switch (S902) “L”: ON
35	BEEP	O	Beep signal output to power amp (IC404)
36	NCO	O	Not used. (Open)
37	$\overline{\text{TESTIN}}$	I	Test mode detection signal input
38	$\overline{\text{ACCIN}}$	I	Accessory power supply detection signal input
39	NCO	O	Not used. (Open)
40	TELATT	I	Telephone ATT detection signal input
41	NIH	I	Connect to power supply.
42	BUSSO	O	Sony-Bus serial data signal output to bus interface (IC803)
43	BUSSI	I	Sony-Bus serial data signal input from bus interface (IC803)
44	BUSCKO	O	Sony-Bus serial clock signal output to bus interface (IC803)
45	I2CSIO	I/O	I2C bus serial data signal input/output
46	NCO	O	Not used. (Open)
47	I2CCKO	O	I2C bus serial clock signal output
48	NCO	O	Not used. (Open)
49	TUNON	O	Tuner power supply control signal output to power supply (IC901)
50	PW ON	O	System power supply control signal output to power supply (IC901)

Pin No.	Pin Name	I/O	Pin Description
51	CD TSTB	O	CD text parameter strob signal output to servo IC (IC1)
52	CD RFOK	I	RF OK signal input from servo IC (IC1)
53	CD XRST	O	Reset signal output to servo IC (IC1)
54	CD A0	O	Command/parameter identification signal output to servo IC (IC1) "L": Command, "H": Parameter
55	CD STB	O	Data strob signal output to servo IC (IC1)
56	CD XTALEN	O	Crystal oscillation control signal output to servo IC (IC1)
57	CD LIMIT	I	CD Mechanism in-limit switch signal input from limit switch (SW3)
58	CD PH1	I	CD Mechanism PH1 detection signal input Not used in this set.
59	CD DSW	I	CD Mechanism down switch signal input from down switch (SW4)
60	CD INSW/PH2	I	CD Mechanism disc-in switch detection signal input from disc-in switch (SW1)
61	CD PH3	I	CD Mechanism PH3 detection signal input Not used in this set.
62	CD LM LO	O	CD Mechanism loading motor control signal output to loading motor drive (IC2)
63	CD LM EJ	O	CD Mechanism eject motor control signal output to loading motor drive (IC2)
64, 65	NCO	O	Not used. (Open)
66	$\overline{\text{AMPATT}}$	O	Power amp ATT control signal output to power amp (IC404)
67	AMPON	O	Power amp standby control signal output to power amp (IC404)
68	CDM ON	O	CD mechanism deck power supply control signal output
69	ATT	O	System ATT control signal output
70	$\overline{\text{VOLATT}}$	O	Electrical volume ATT control signal output to electrical volume (IC401)
71 – 75	NCO	O	Not used. (Open)
76	4VPRE	I	Pre-out menu selection set up signal input CA650X/CA690X: "H", CA660X: "L"
77, 78	NCO	O	Not used. (Open)
79	CD ON	O	CD on signal output "H": Play, "L": Loading or standby
80 – 85	NCO	O	Not used. (Open)
86	EE SIO	I/O	EEPROM serial data signal input/output
87	EE CKO	O	EEPROM serial clock signal output
88	NCO	O	Not used. (Open)
89	FLASH W	I	Flash microcomputer write detection signal input "L": Write mode
90	NCO	O	Not used. (Open)
91	XKEYON	O	Key power supply control signal output
92	DOORIND	O	Sub panel power supply control signal output
93	ILLON	O	Illumination power supply control signal output
94	$\overline{\text{DOOR SW}}$	I	Front panel open/close detection signal input "L": Close, "H": Open
95	DAVSS	—	Ground pin
96	RE IN1	I	Rotary encoder signal input from rotary encoder (RE501)
97	RE IN0	I	Rotary encoder signal input from rotary encoder (RE501)
98	RC IN	I	Rotary commander shift key signal input from remote in jack (CNP801) "L": Shift key on
99	NCO	O	Not used. (Open)
100	DAVDD	—	Power supply pin

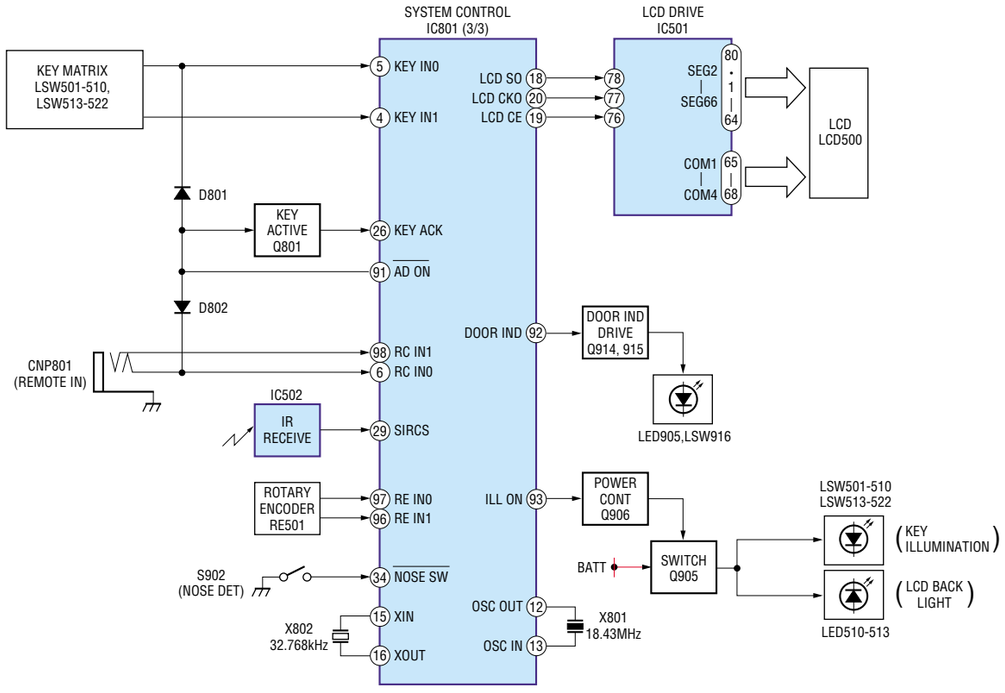
3-2. BLOCK DIAGRAM — CD SECTION —



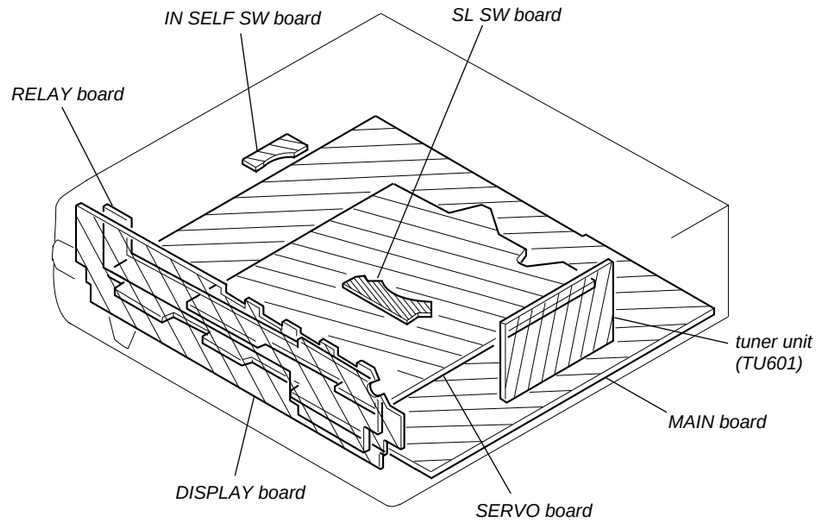
3-3. BLOCK DIAGRAM — TUNER SECTION —



3-4. BLOCK DIAGRAM — DISPLAY SECTION —



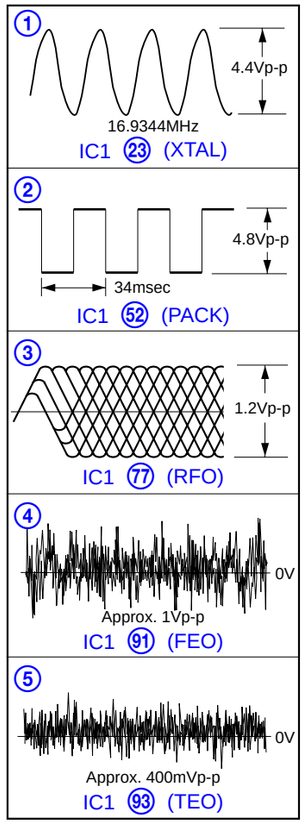
3-5. CIRCUIT BOARDS LOCATION



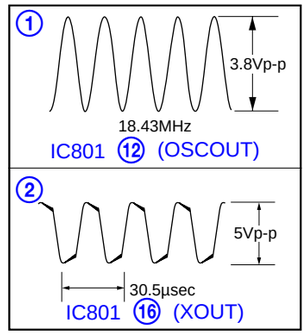
• Waveforms

— Servo Board —

(MODE: CD PLAY)



— Main Board —



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

for schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- Δ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

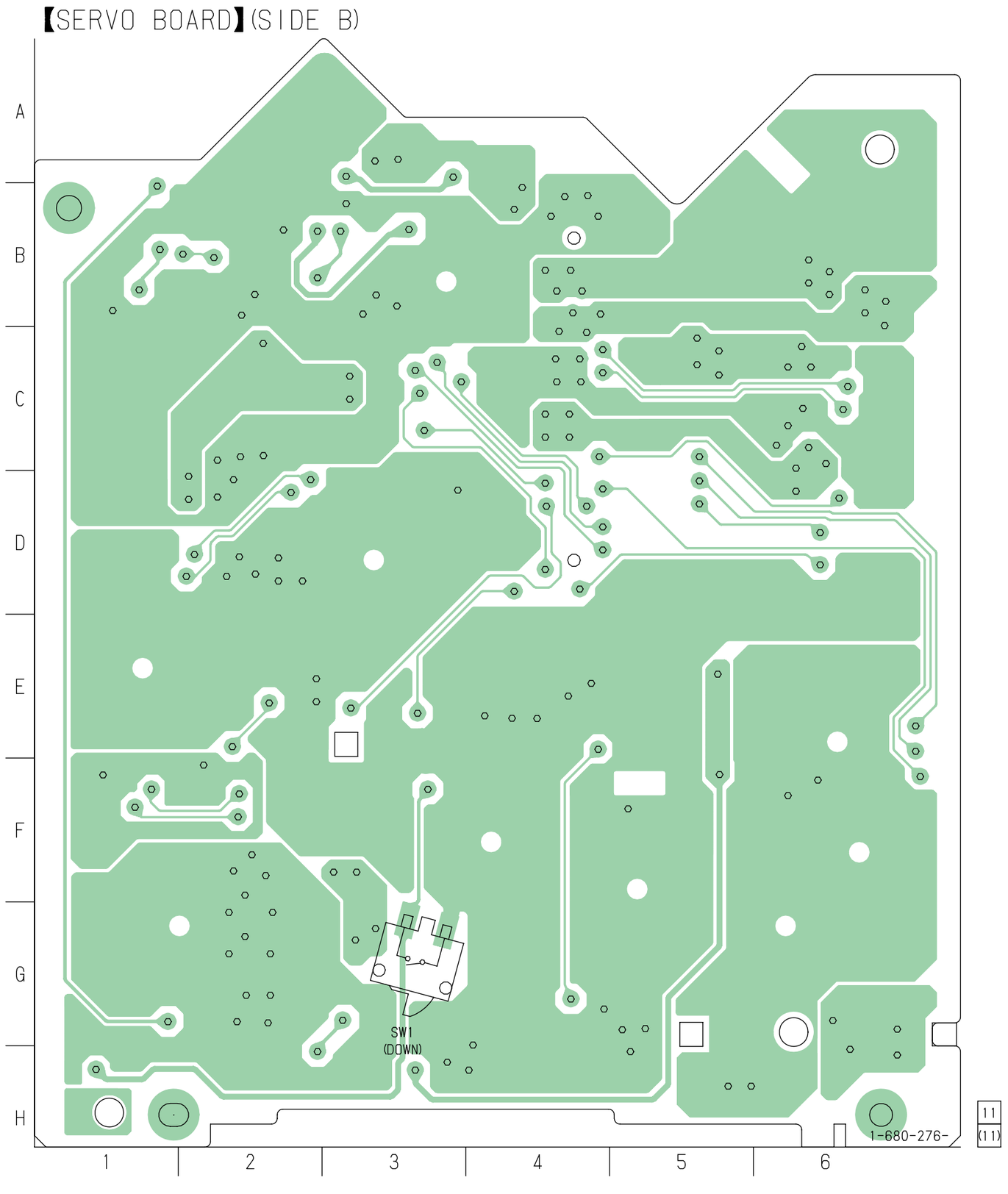
- ▬ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM
  - ⇨ : CD

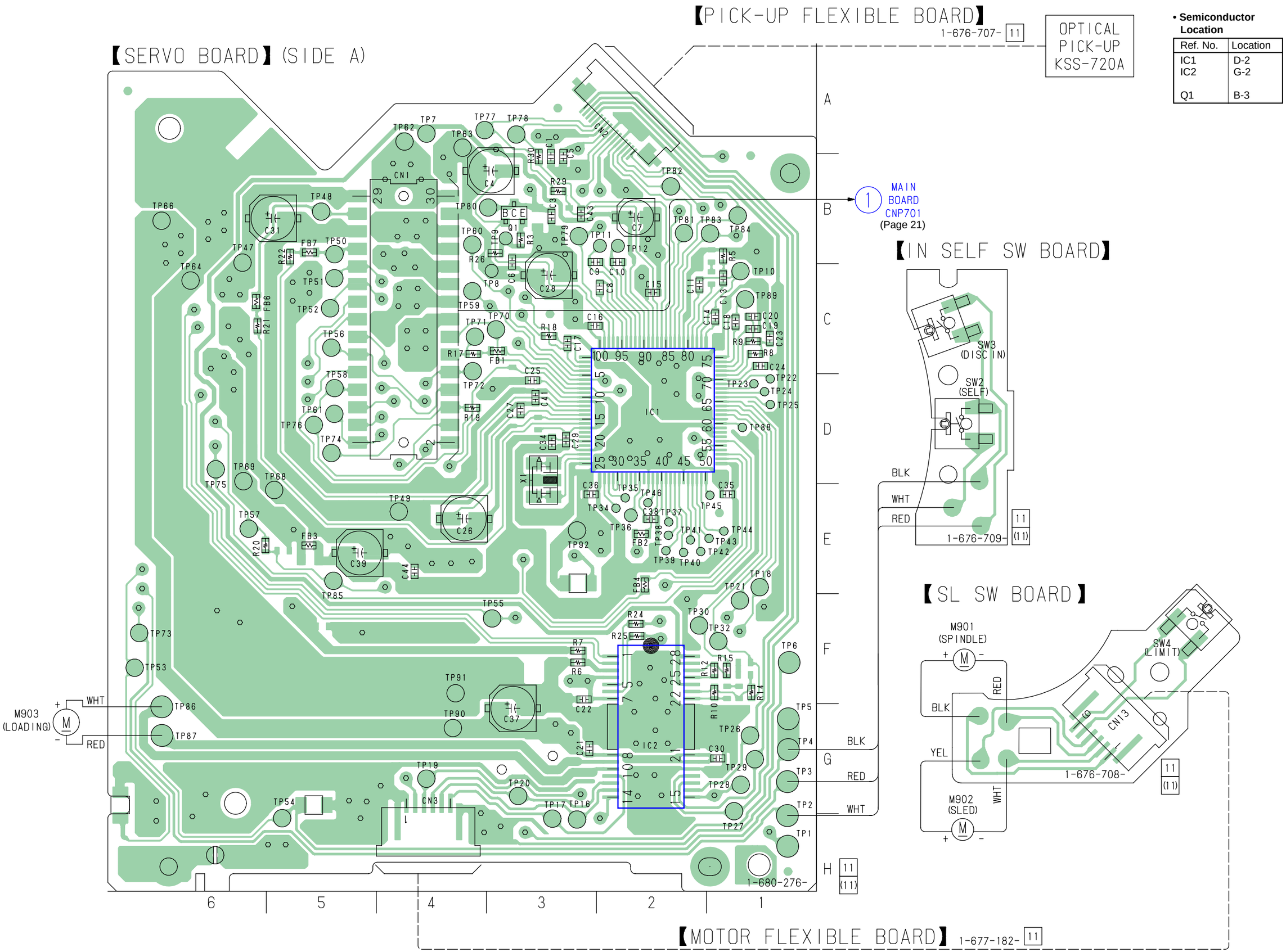
for printed wiring boards:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▬ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side (Side B): Parts on the pattern face side seen from the pattern face are indicated.
Parts face side (Side A): Parts on the parts face side seen from the parts face are indicated.

3-6. PRINTED WIRING BOARDS — CD MECHANISM SECTION —





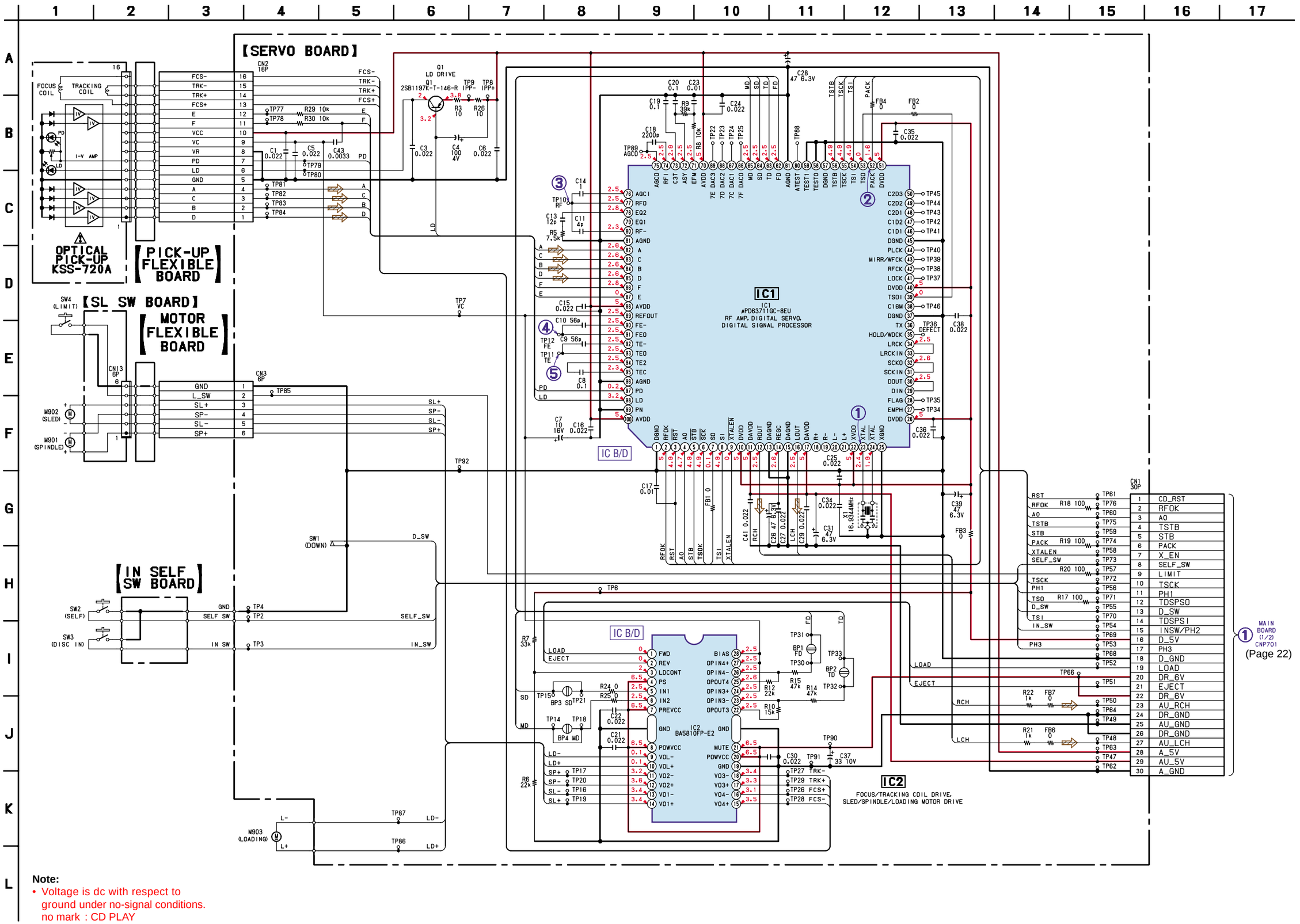
- **Semiconductor Location**

Ref. No.	Location
IC1	D-2
IC2	G-2
Q1	B-3

• Refer to page 17 for Waveforms.

3-7. SCHEMATIC DIAGRAM — CD MECHANISM SECTION —

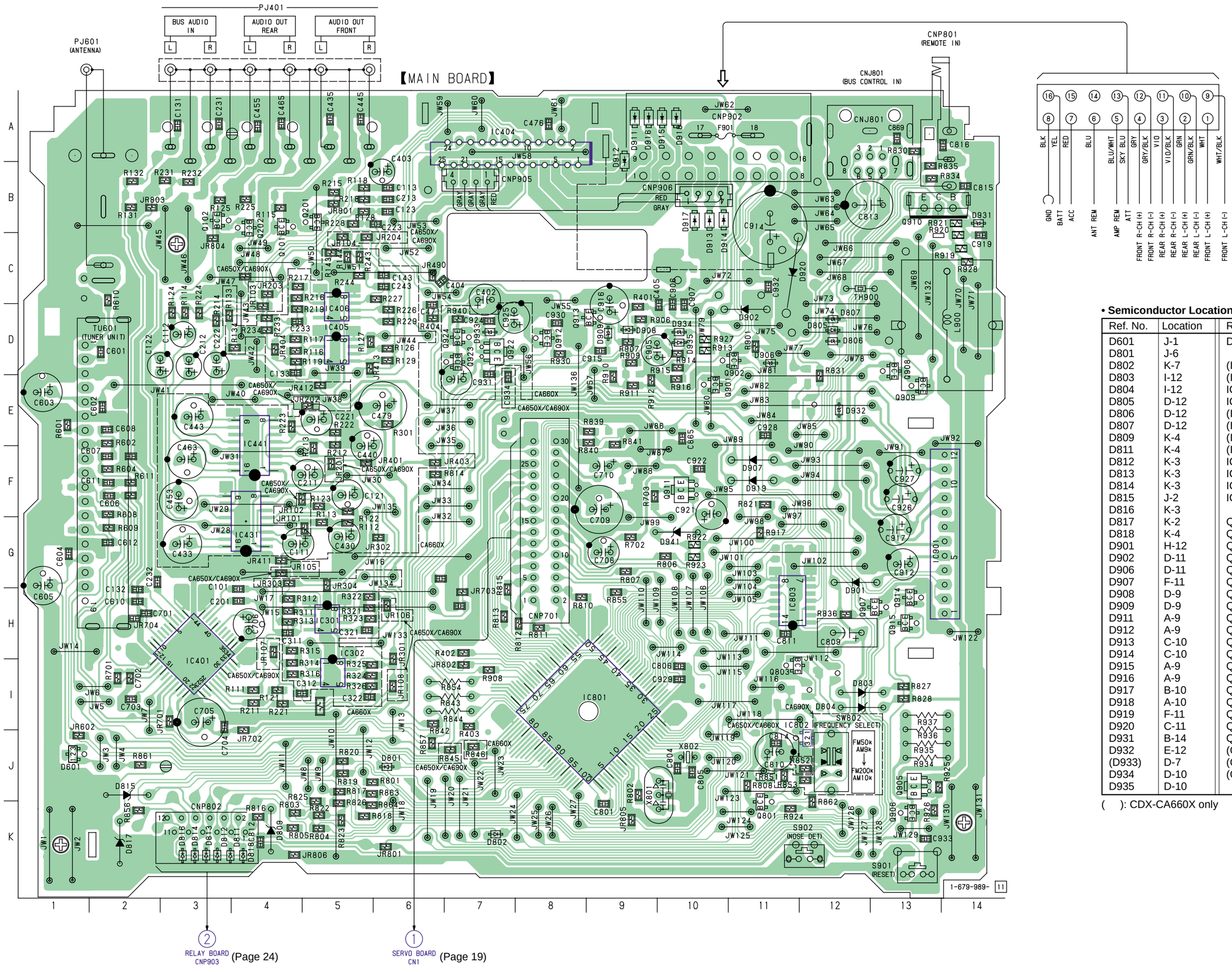
• Refer to page 28 for IC Block Diagrams.



Note:

- Voltage is dc with respect to ground under no-signal conditions.
  no mark : CD PLAY

3-8. PRINTED WIRING BOARD — MAIN SECTION —



• **Semiconductor Location**

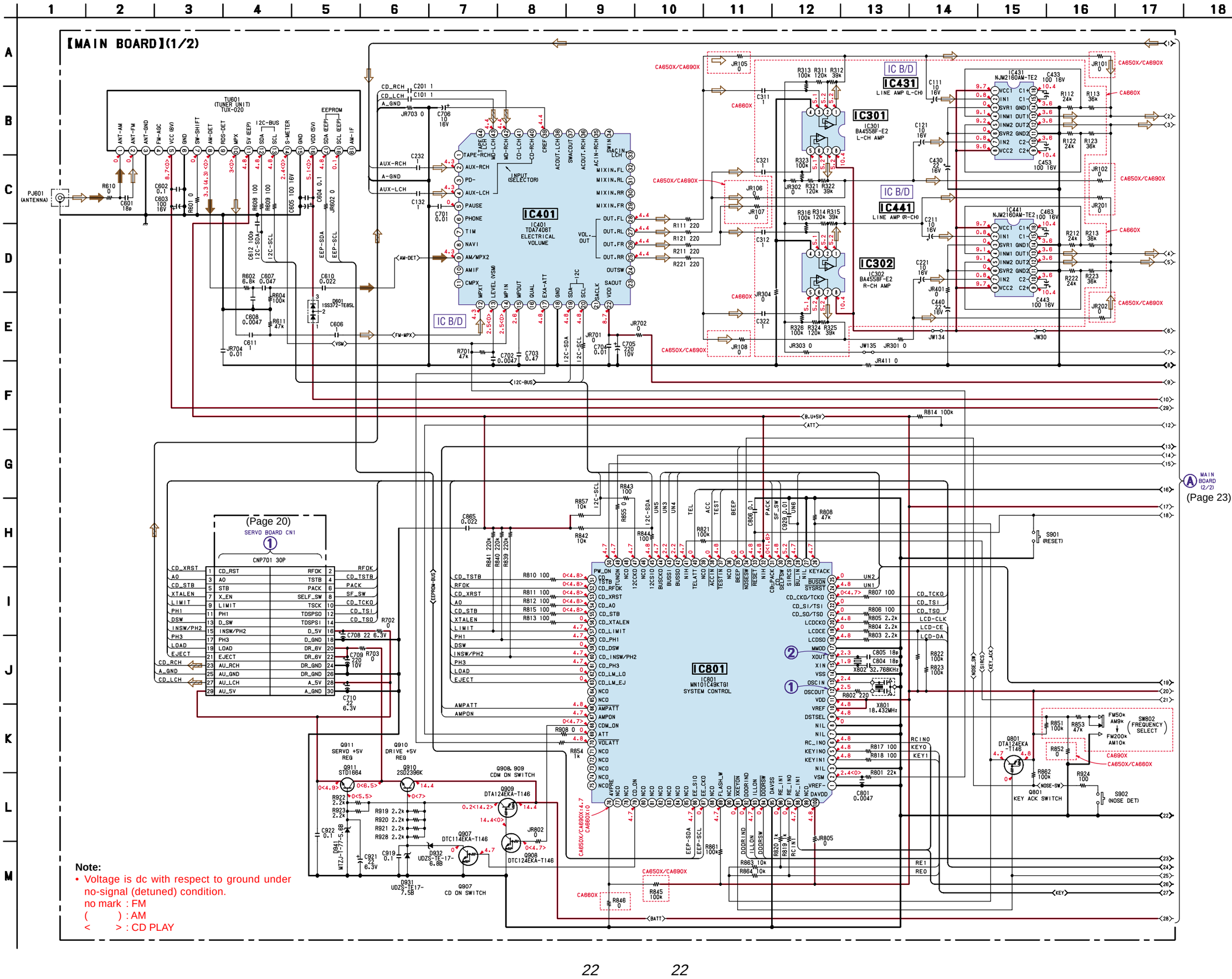
Ref. No.	Location	Ref. No.	Location
D601	J-1	D941	G-10
D801	J-6		
D802	K-7	(IC301)	H-5
D803	I-12	(IC302)	I-5
D804	I-12	IC401	I-3
D805	D-12	IC404	A-7
D806	D-12	(IC405)	D-5
D807	D-12	(IC406)	D-5
D809	K-4	(IC431)	G-4
D811	K-4	(IC441)	E-4
D812	K-3	IC801	I-9
D813	K-3	IC802	J-12
D814	K-3	IC803	H-11
D815	J-2	IC901	G-13
D816	K-3		
D817	K-2	Q101	C-4
D818	K-4	Q102	B-3
D901	H-12	Q201	B-5
D902	D-11	Q202	B-4
D906	D-11	Q801	K-11
D907	F-11	Q803	I-11
D908	D-9	Q901	E-10
D909	D-9	Q902	D-11
D911	A-9	Q905	J-13
D912	A-9	Q906	K-13
D913	C-10	Q907	H-12
D914	C-10	Q908	D-13
D915	A-9	Q909	E-13
D916	A-9	Q910	B-13
D917	B-10	Q911	F-10
D918	A-10	Q912	D-8
D919	F-11	Q913	D-8
D920	C-11	Q914	H-13
D931	B-14	Q915	H-13
D932	E-12	(Q922)	D-7
(D933)	D-7	(Q923)	D-7
D934	D-10	(Q924)	D-7
D935	D-10		

( ): CDX-CA660X only

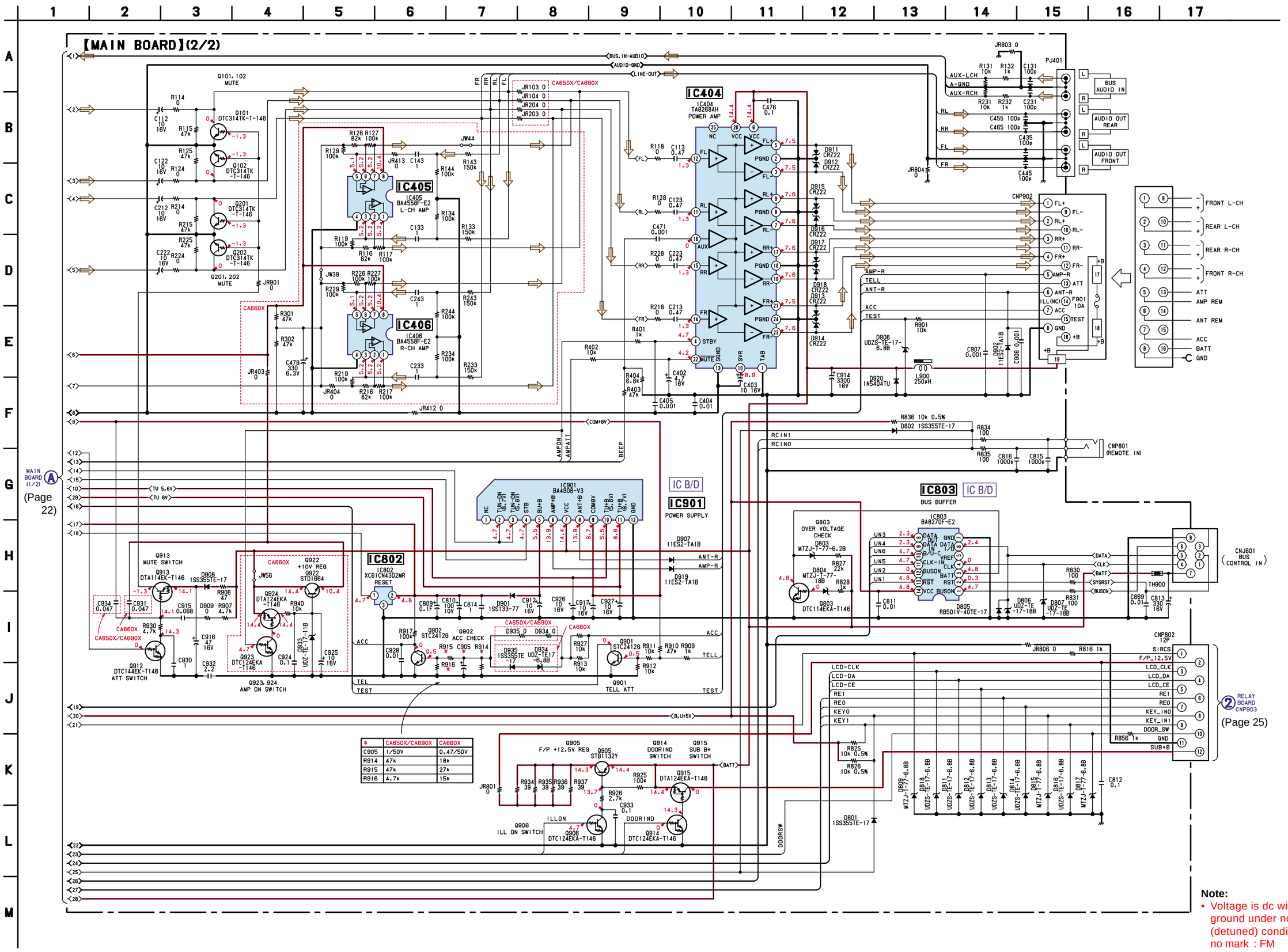
• Refer to page 17 for Waveforms.

3-9. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) —

• Refer to page 28 for IC Block Diagrams.



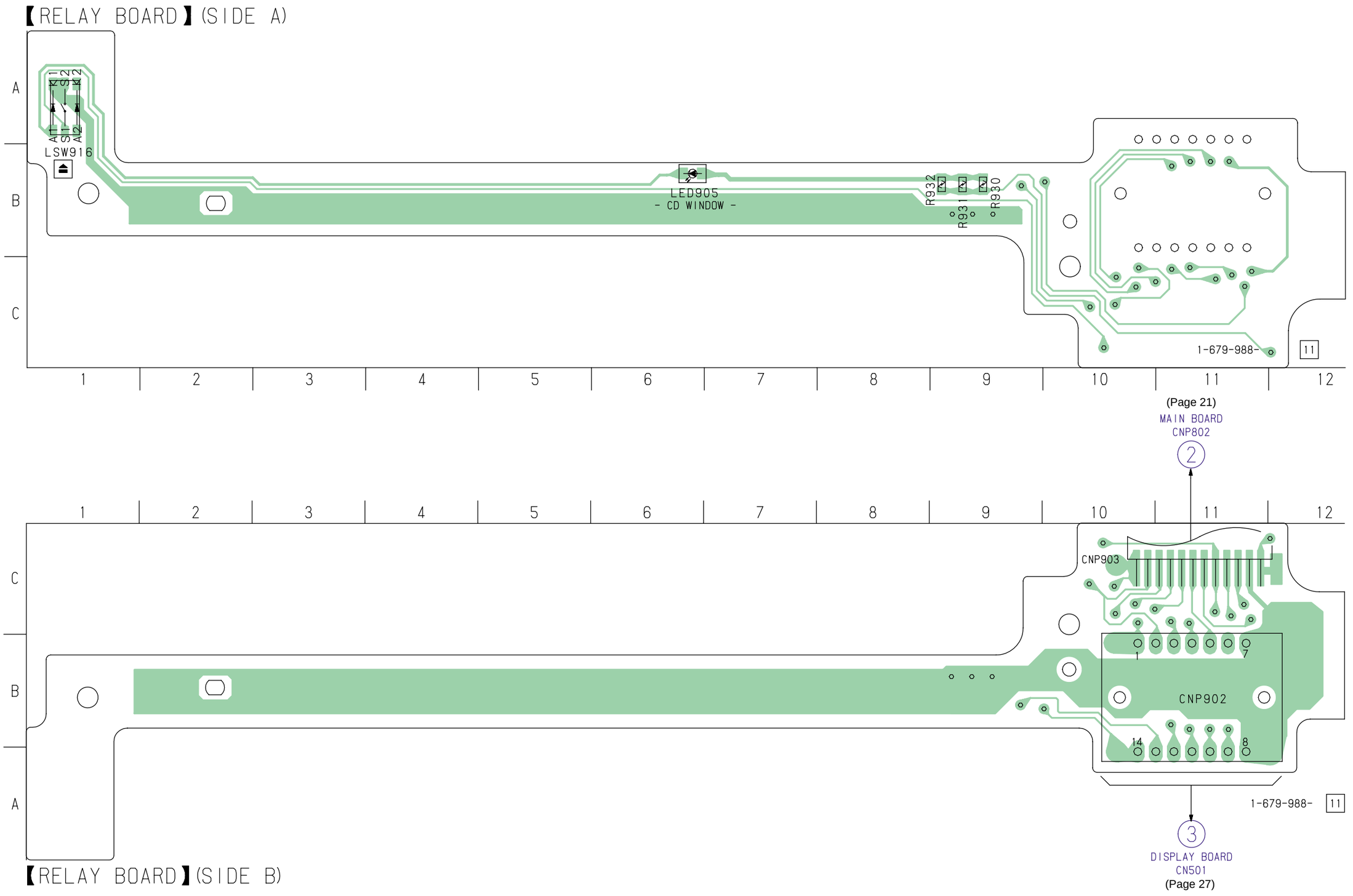
3-10. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 29 for IC Block Diagrams.



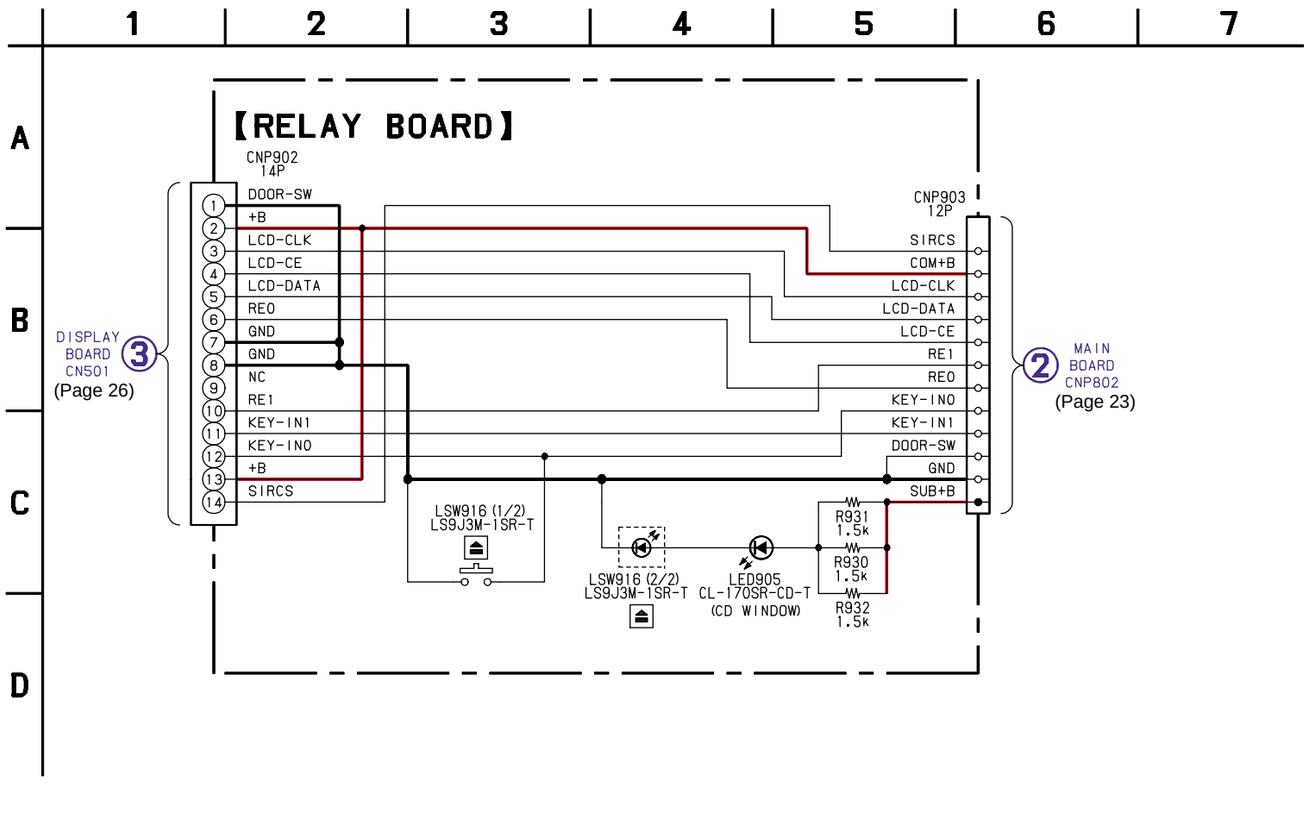
*	CA650X/CA690X	CA660X
C905	1/50V	0.47/50V
R914	47k	18k
R915	47k	27k
R916	4.7k	15k

Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

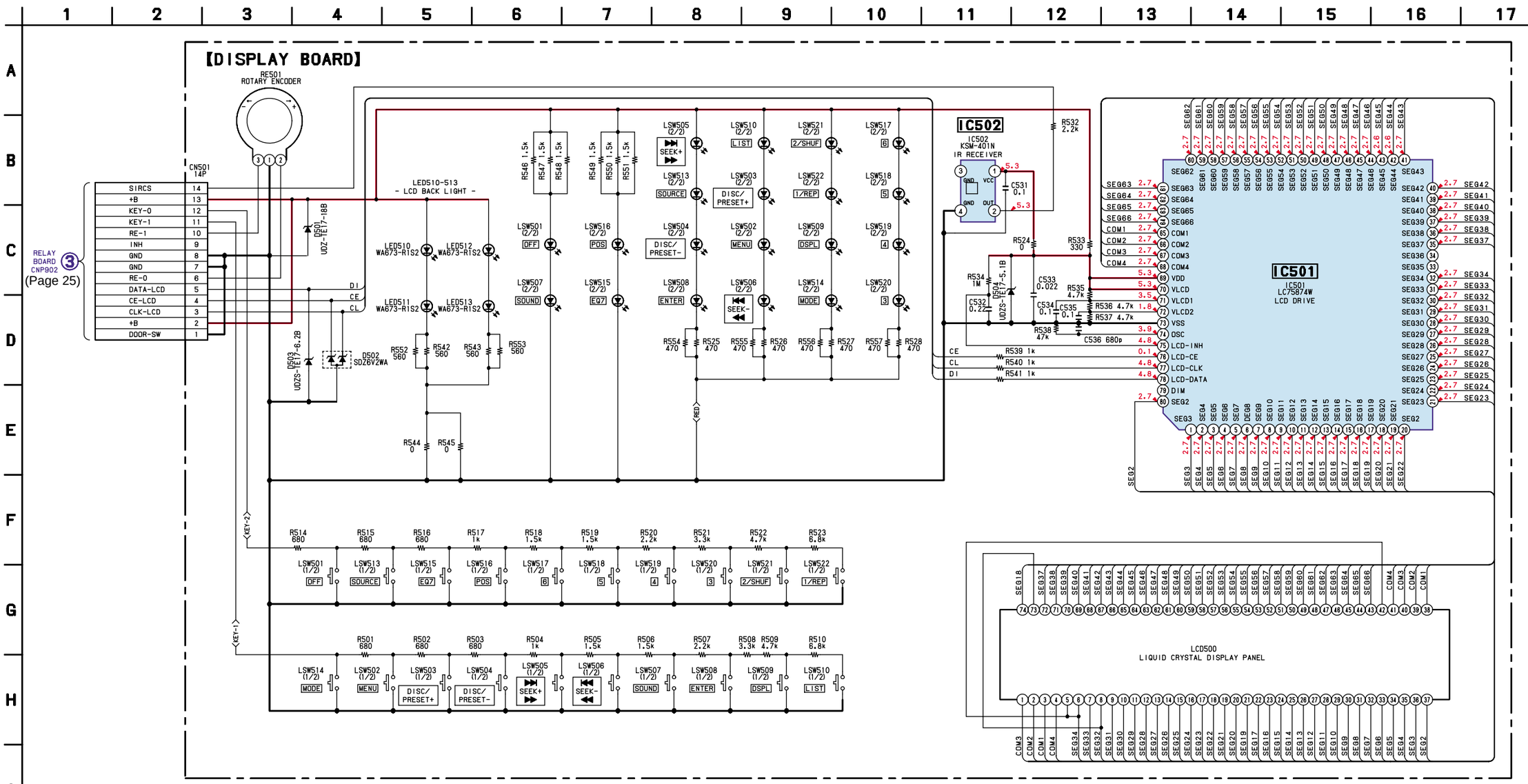
3-11. PRINTED WIRING BOARD — RELAY SECTION —



3-12. SCHEMATIC DIAGRAM — RELAY SECTION —



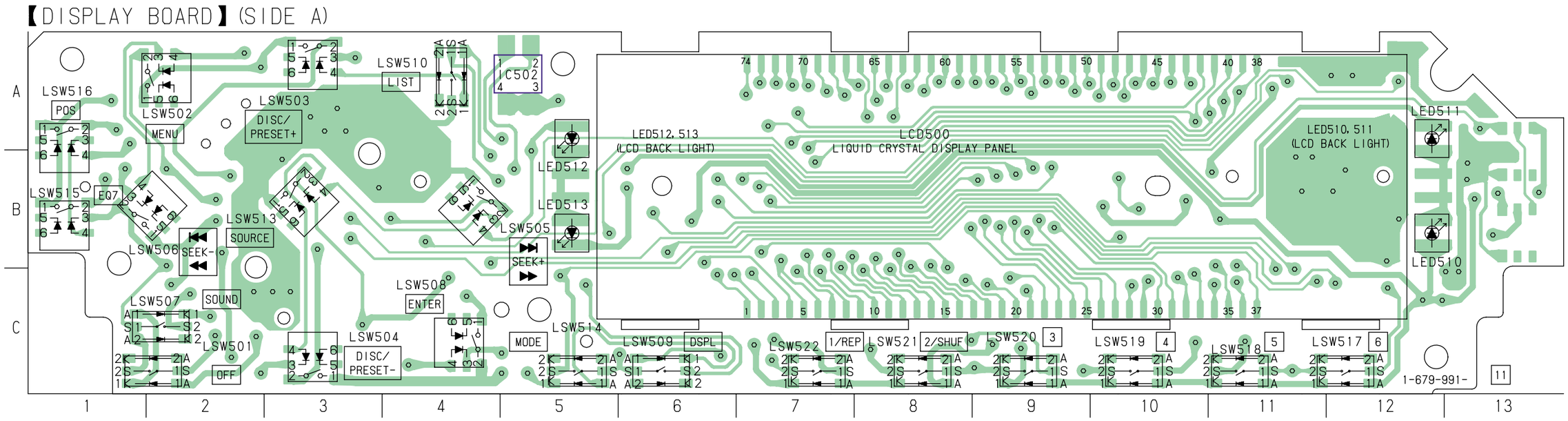
3-13. SCHEMATIC DIAGRAM — DISPLAY SECTION —



Note:

- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

3-14. PRINTED WIRING BOARD — DISPLAY SECTION —



• **Semiconductor Location**

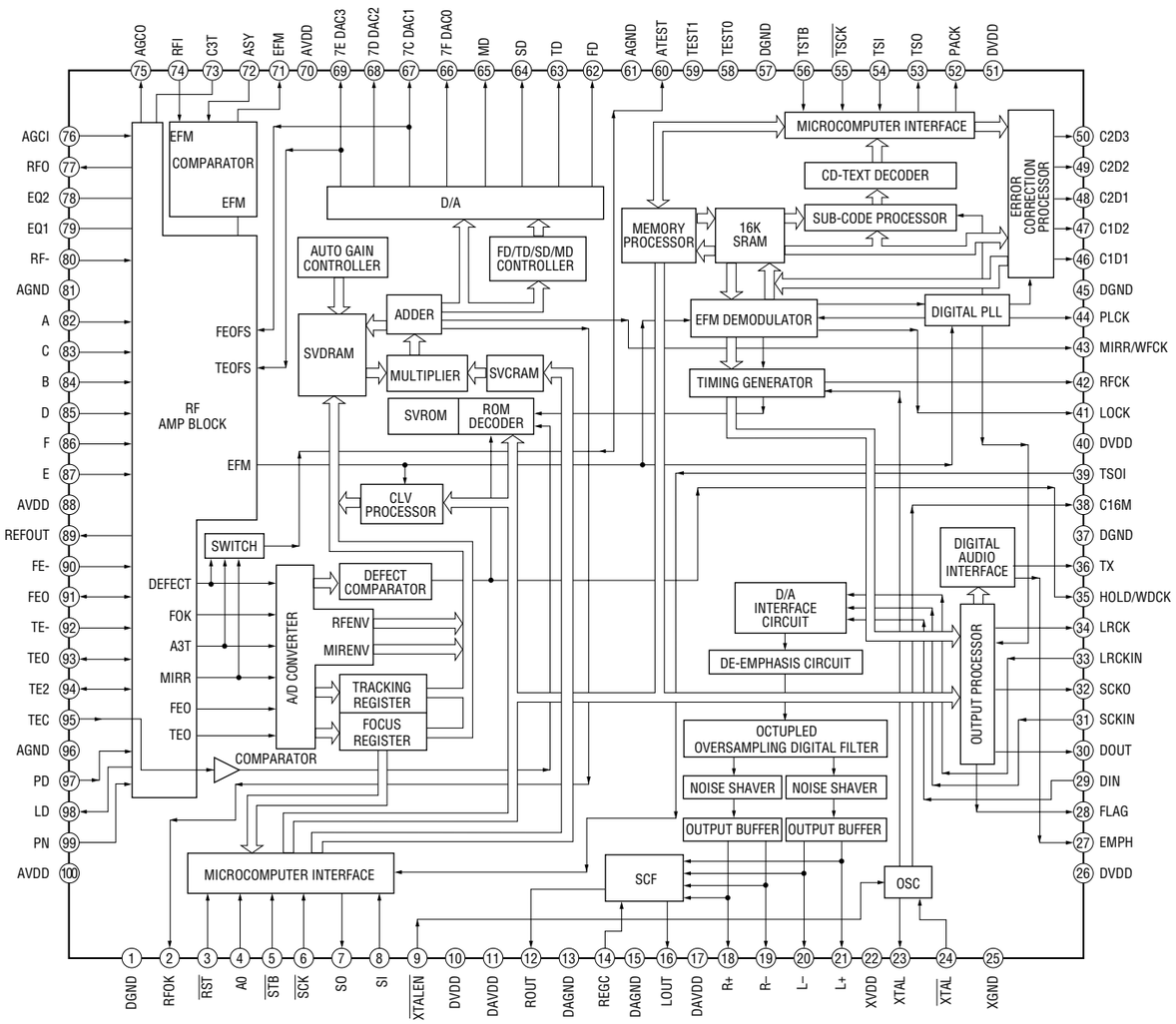
Ref. No.	Location
(D501)	A-11
(D502)	A-10
(D503)	B-10
(D504)	B-6
(IC501)	B-9
IC502	A-5
LED510	B-12
LED511	A-12
LED512	B-5
LED513	B-5

( ) : SIDE B

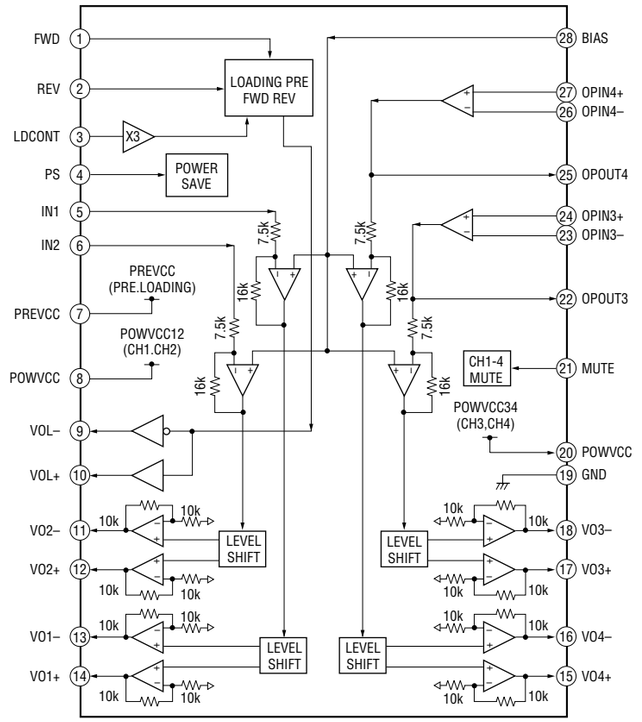
③
RELAY BOARD
CNP902
(Page 24)

• IC BLOCK DIAGRAMS

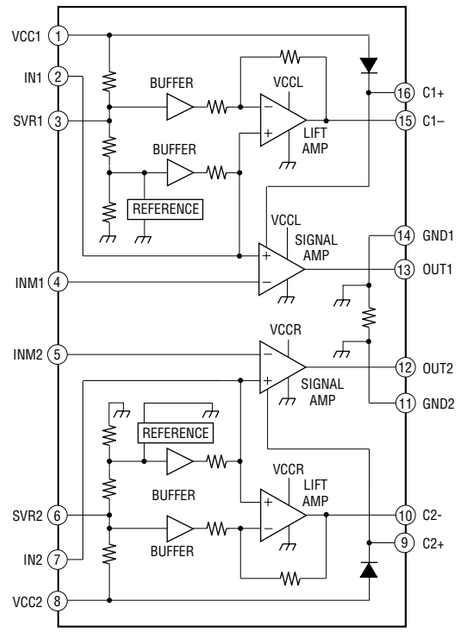
IC1 µPD63711GC-8EU



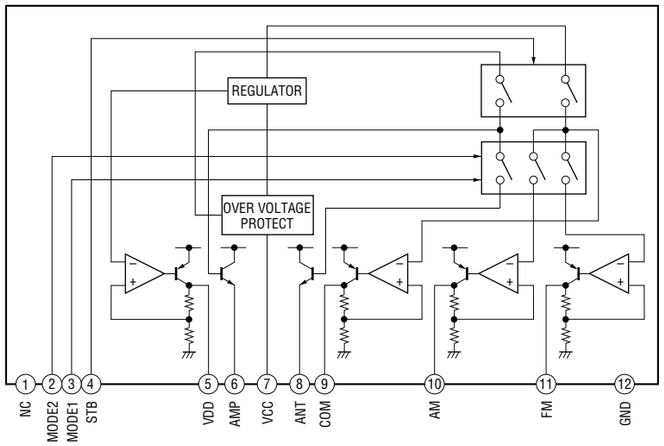
IC2 BA5810FP



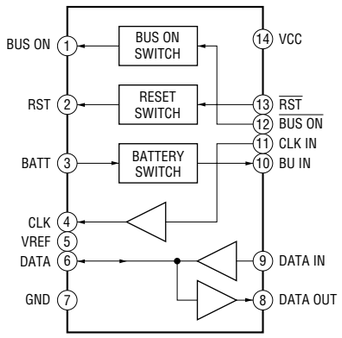
IC431, 441 NJM2160AM-TE2



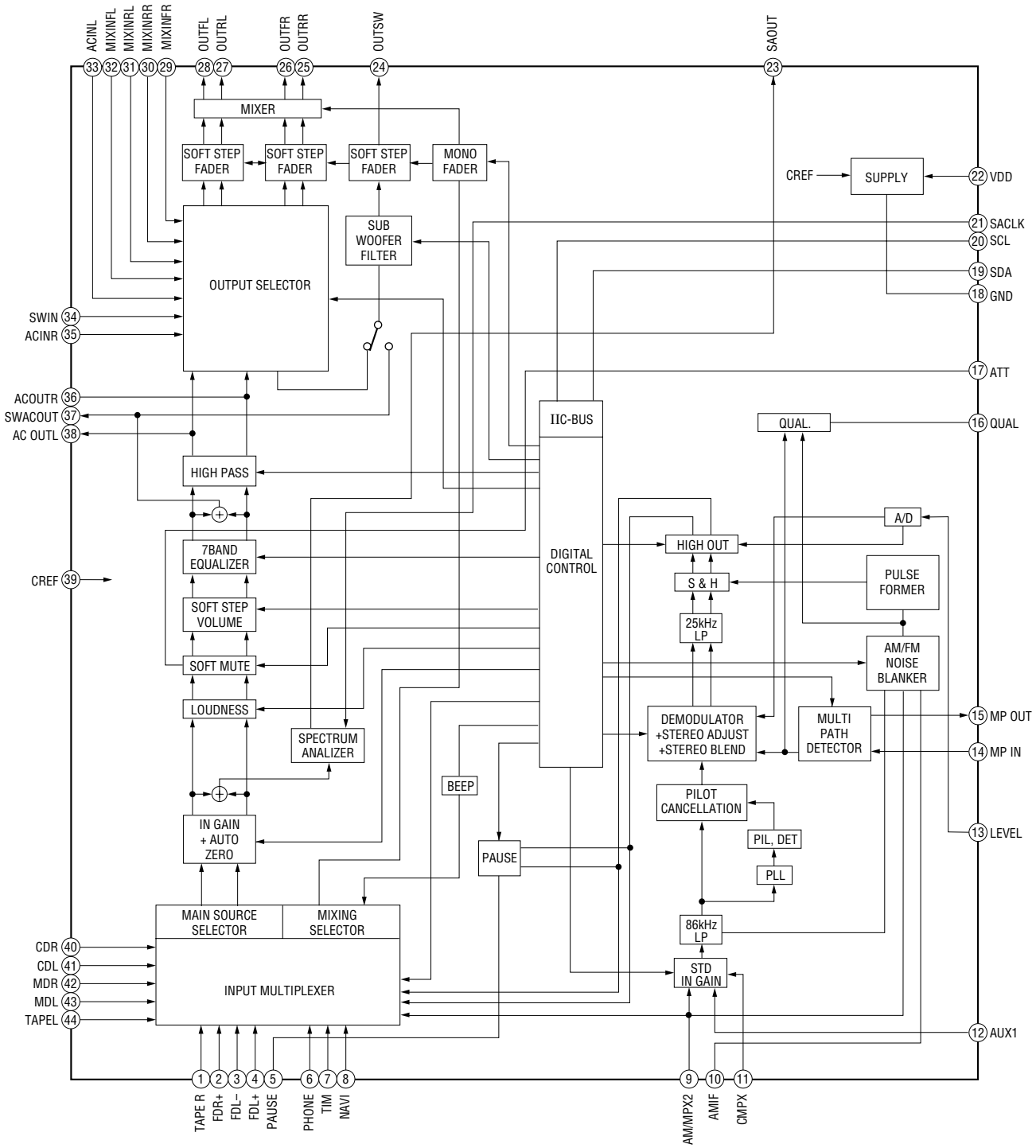
IC901 BA4908-V3



IC803 BA8270F-E2



IC401 TDA7406T



SECTION 4
EXPLODED VIEWS

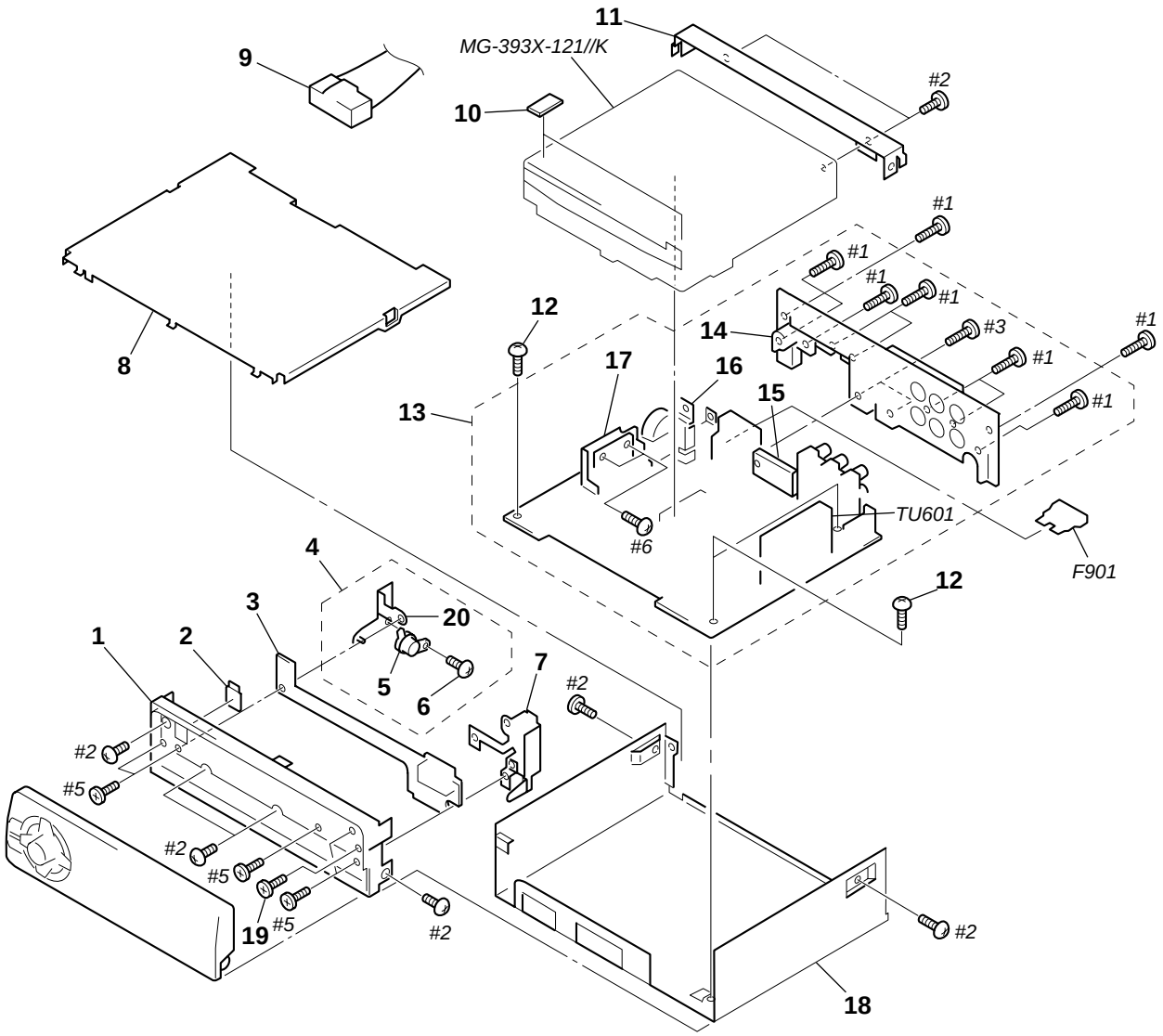
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

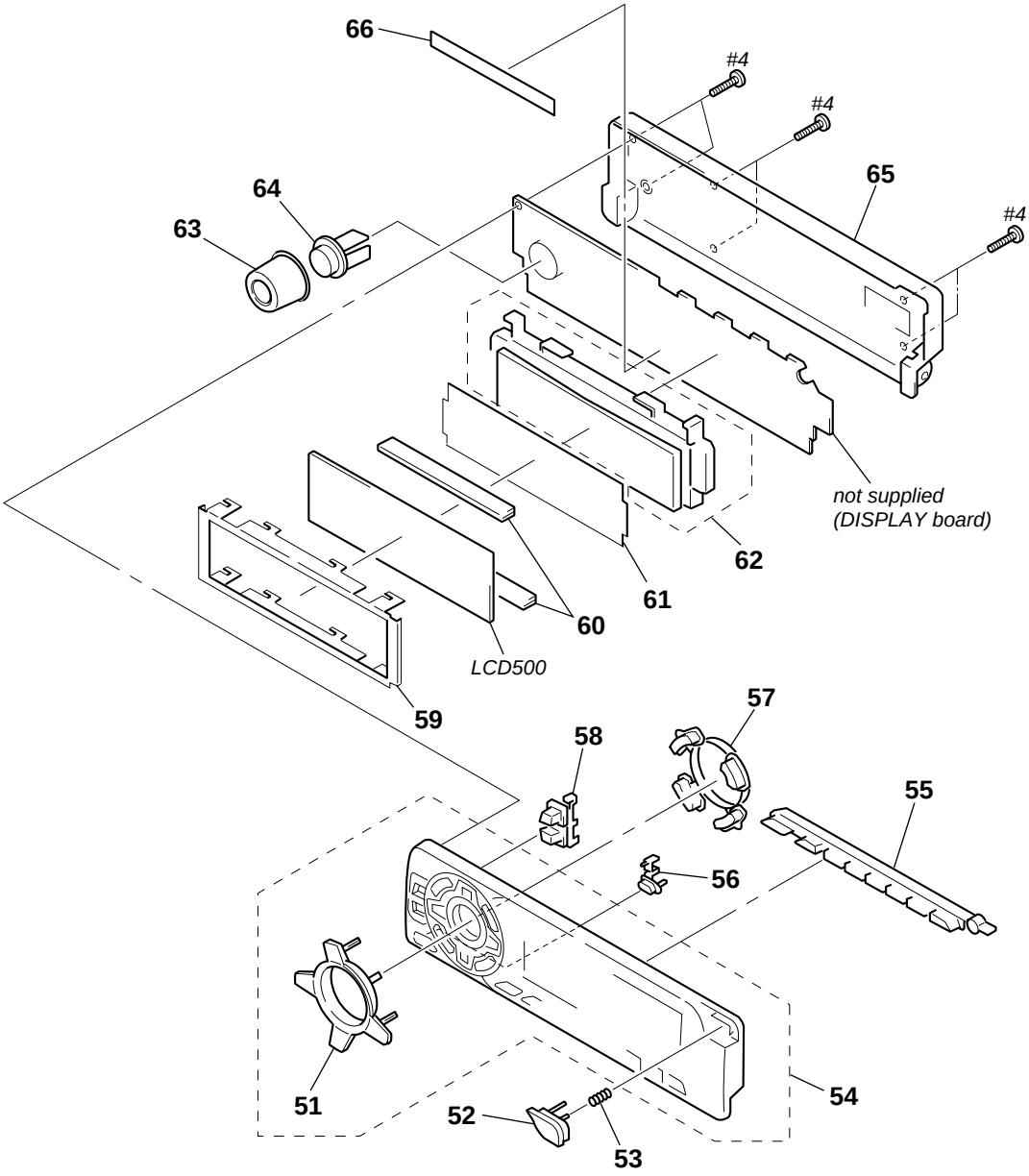
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

4-1. CHASSIS SECTION



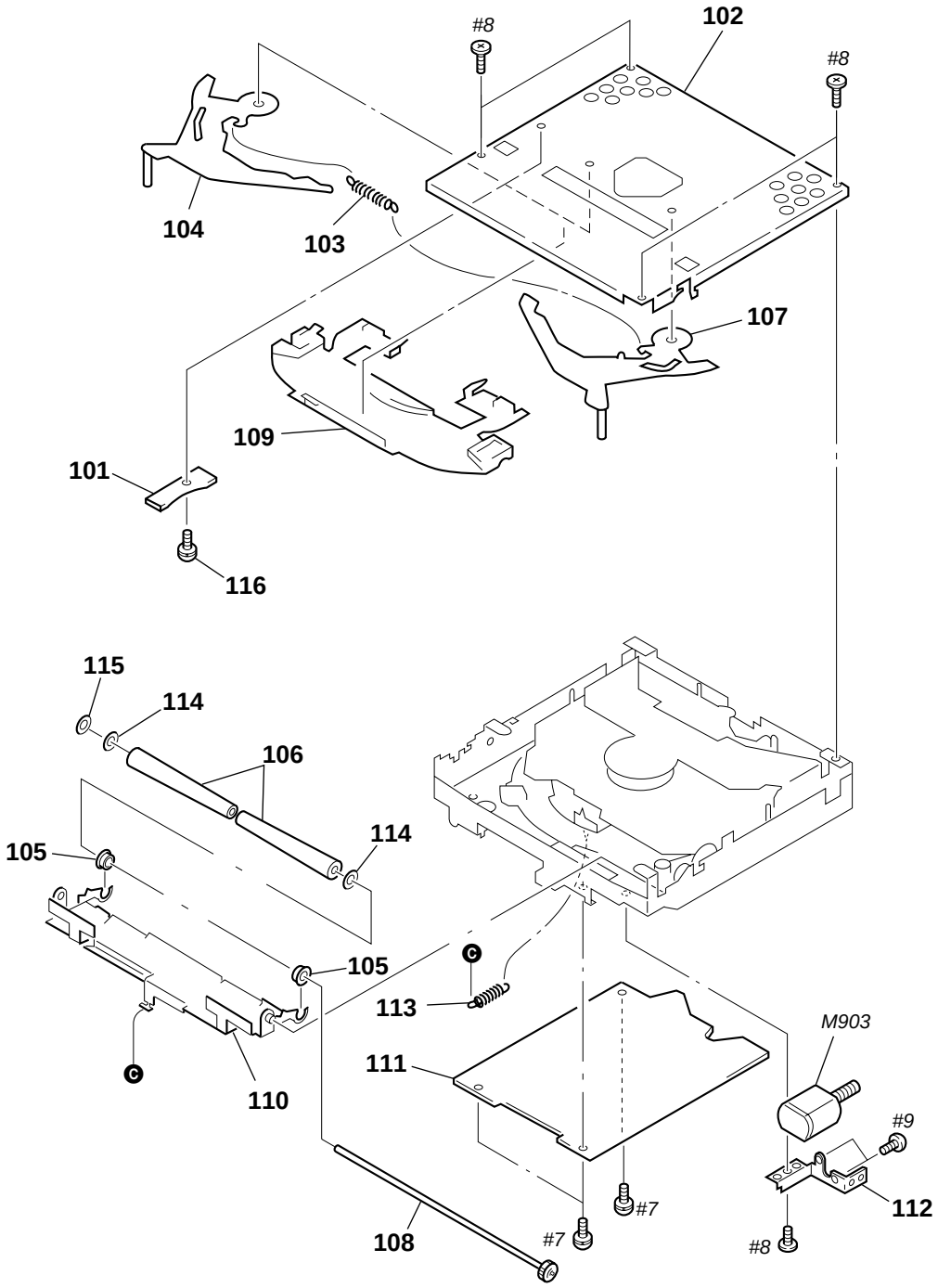
Ref. No.	Part No.	Description	Remark
1	X-3380-007-1	PANEL ASSY (CD), SUB	
2	3-041-039-01	BUTTON (EJECT)	
* 3	1-679-988-11	RELAY BOARD	
4	X-3376-686-1	GEAR ASSY	
5	3-030-909-01	DAMPER, OIL	
6	3-713-786-51	SCREW +P 2X3	
7	X-3376-687-1	LOCK ASSY	
* 8	3-224-309-01	COVER	
9	1-776-207-82	CORD (WITH CONNECTOR) (POWER)	
* 10	3-024-285-01	CUSHION (RUBBER)	
* 11	3-041-173-01	BRACKET (CD)	
12	3-922-535-11	SCREW (+BTT)	
* 13	A-3283-087-A	MAIN BOARD, COMPLETE (CA660X)	
* 13	A-3283-091-A	MAIN BOARD, COMPLETE (CA690X)	
13	A-3283-156-A	MAIN BOARD, COMPLETE (CA650X)	
14	3-226-766-01	HEAT SINK (MAIN)	
* 15	3-019-565-01	BRACKET (IC)	
* 16	3-041-261-01	BRACKET (TR)	
* 17	3-224-313-01	HEAT SINK (REG)	
* 18	3-224-308-01	CHASSIS	
19	3-035-250-01	SCREW (LOCK)	
* 20	X-3376-689-1	BRACKET (GEAR) ASSY	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
TU601	A-3220-738-A	TUNER UNIT (TUX-020)	

4-2. FRONT PANEL SECTION



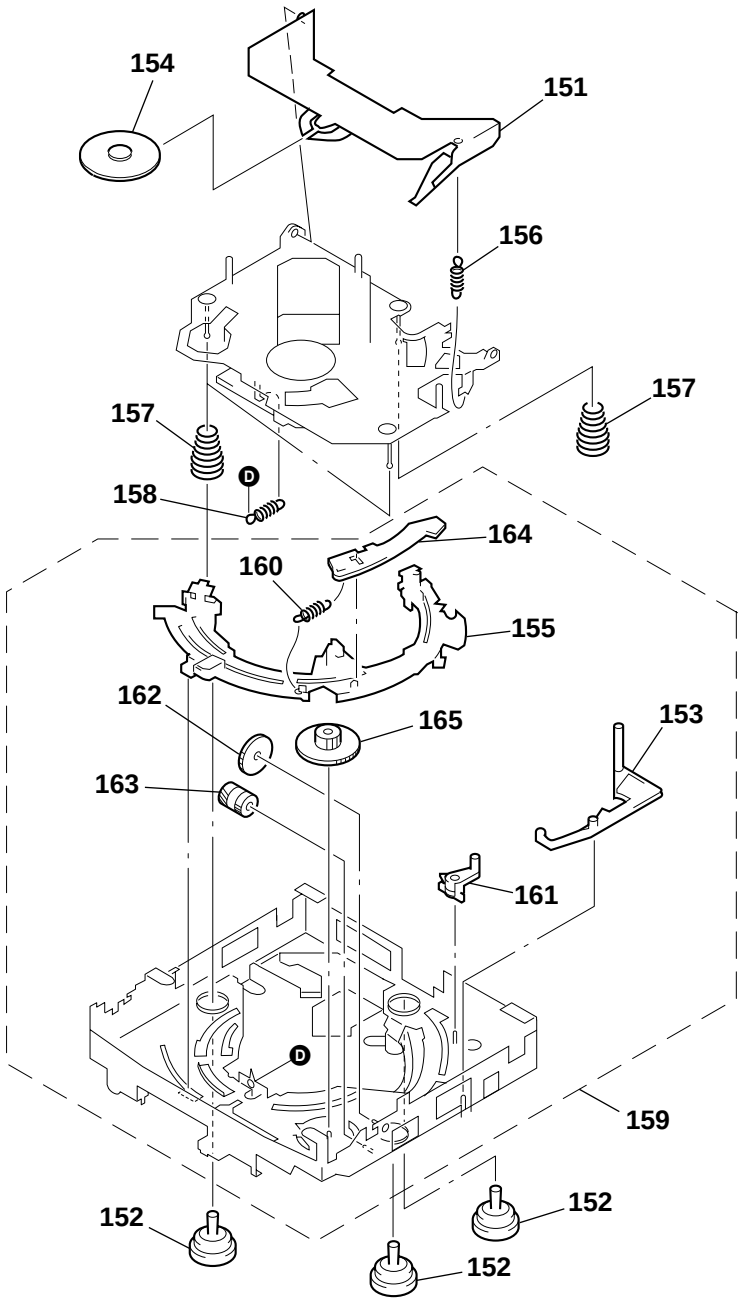
Ref. No.	Part No.	Description	Remark
51	3-224-293-11	BUTTON (CROSS)	
52	3-224-300-11	BUTTON (OPEN)	
53	3-038-318-01	SPRING (RELEASE)	
54	X-3379-986-1	PANEL (S) ASSY, FRONT (CA650X)	
54	X-3379-993-1	PANEL (S) ASSY, FRONT (CA660X)	
54	X-3380-014-1	PANEL (S) ASSY, FRONT (CA690X)	
55	3-224-299-01	BUTTON (1-6)	
56	3-224-298-01	BUTTON (OFF)	
57	3-224-297-01	BUTTON (MANU)	
58	3-224-296-01	BUTTON (EQ)	
* 59	3-224-306-01	PLATE (LCD), GROUND	
60	1-694-787-11	CONDUCTIVE BOARD, CONNECTION	
* 61	3-224-307-01	SHEET (DIFFUSION)	
* 62	X-3379-981-1	HOLDER (LCD) ASSY	
63	3-224-292-11	KNOB (VOL)	
64	3-224-295-01	BUTTON (SOURCE)	
65	X-3379-982-1	PANEL ASSY, FRONT BACK	
66	3-231-599-01	CUSHION (1-6)	
LCD500	1-804-294-11	DISPLAY PANEL, LIQUID CRYSTAL	

4-3. CD MECHANISM SECTION (1)
(MG-393X-121//K)



Ref. No.	Part No.	Description	Remark
* 101	1-676-709-11	IN SELF SW BOARD	
102	3-040-039-01	CHASSIS (T)	
103	3-040-038-01	SPRING (LR), TENSION	
104	3-040-050-01	LEVER (L)	
105	3-040-022-01	RETAINER (ROLLER), SHAFT	
106	3-040-044-01	ROLLER (S)	
107	3-040-067-01	LEVER (R)	
108	A-3301-980-A	SHAFT ROLLER ASSY	
109	3-040-037-01	GUIDE (DISC)	
110	3-040-040-01	ARM (ROLLER)	
* 111	A-3283-048-A	SERVO BOARD, COMPLETE	
112	3-221-779-01	BRACKET (MOTOR)	
113	3-040-034-01	SPRING (RA), TENSION	
114	3-040-042-01	WASHER	
115	3-043-880-01	RING (RA), RETAINING	
116	3-044-206-11	SCREW, SPECIAL	
M903	A-3315-039-A	MOTOR SUB ASSY, LO (LOADING)	

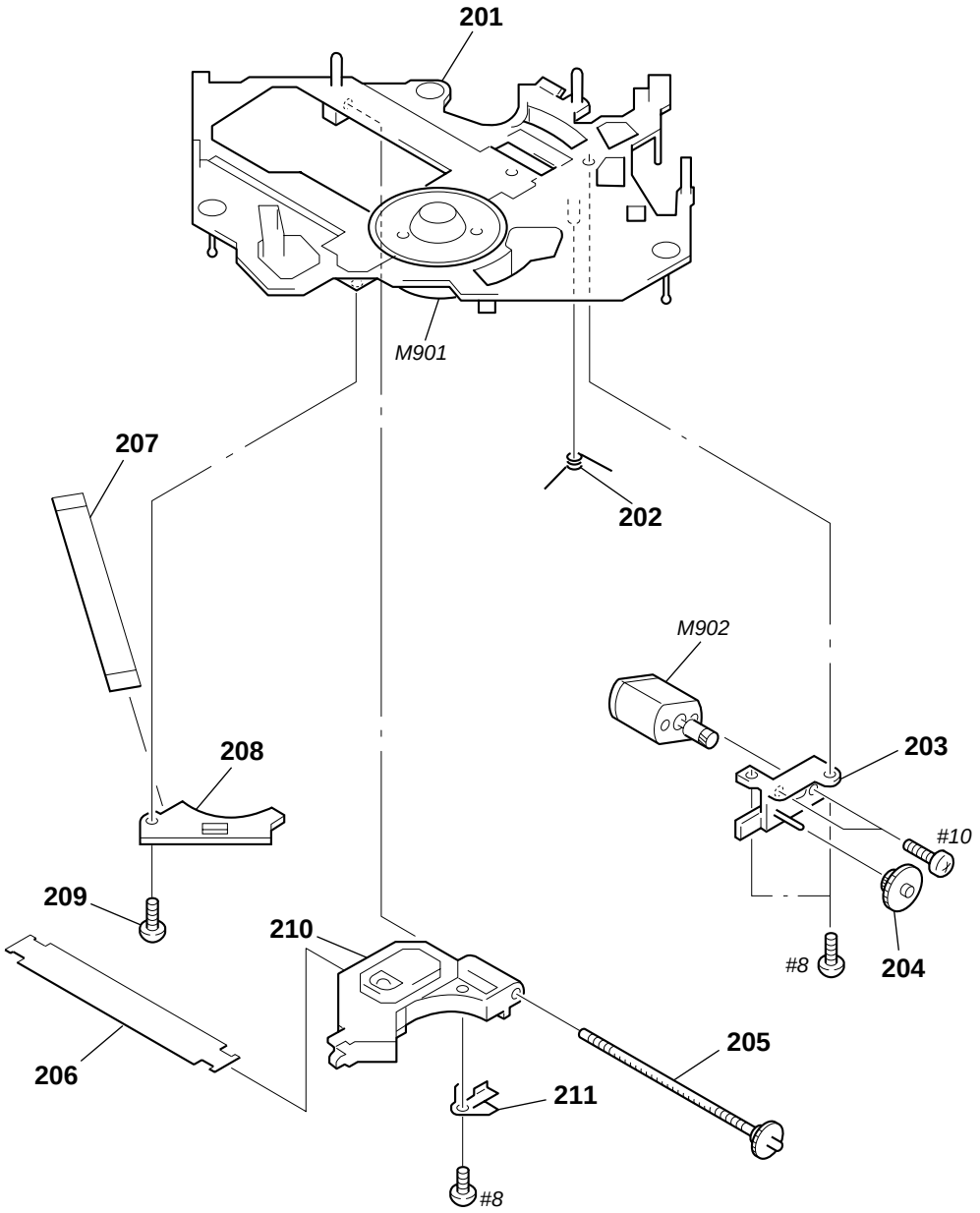
4-4. CD MECHANISM SECTION (2)
(MG-393X-121//K)



Ref. No.	Part No.	Description	Remark
151	3-040-025-01	ARM, CHUCKING	
152	3-040-031-01	DAMPER (T)	
153	3-040-056-01	LEVER (D)	
154	3-040-024-01	RETAINER (DISC)	
155	3-040-053-01	RING, LOADING	
156	3-040-026-01	SPRING (CH), TENSION	
157	3-040-032-01	SPRING (FL), COMPRESSION	
158	3-040-033-01	SPRING (KF1), TENSION	

Ref. No.	Part No.	Description	Remark
159	A-3307-422-A	CHASSIS (M) COMPLETE ASSY	
160	3-040-059-01	SPRING (TR), TENSION	
161	3-040-057-01	LEVER (LOCK)	
162	3-040-058-01	GEAR (MDL)	
163	3-040-052-01	WHEEL (U), WORM	
164	3-040-051-01	LEVER (TR)	
165	3-040-054-01	WHEEL (LW), WORM	

4-5. CD MECHANISM SECTION (3)
(MG-393X-121//K)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
201	X-3378-480-1	CHASSIS (OP) ASSY (including M901)	
202	3-040-029-01	SPRING (SL), TORSION	
203	3-040-045-01	BASE (DRIVING)	
204	3-040-194-01	GEAR (MIDWAY)	
205	A-3301-983-A	SHAFT (FEED) ASSY	
206	1-676-707-11	PICK-UP FLEXIBLE BOARD	
207	1-677-182-11	MOTOR FLEXIBLE BOARD	
* 208	1-676-708-11	SL SW BOARD	
209	3-909-607-01	SCREW	
⚠210	8-820-103-03	PICK-UP, OPTICAL KSS-720A/K1RP	
211	3-040-030-01	SPRING (FEED), PLATE	
M902	A-3301-985-A	MOTOR ASSY, SLED (SLED)	

SECTION 5
ELECTRICAL PARTS LIST

DISPLAY

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
		DISPLAY BOARD			
		**********			
	1-694-787-11	CONDUCTIVE BOARD, CONNECTION			
*	3-224-306-01	PLATE (LCD), GROUND			
*	3-224-307-01	SHEET (DIFFUSION)			
		< CAPACITOR >			
C531	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C532	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C533	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C534	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C535	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C536	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
		< CONNECTOR >			
CN501	1-794-065-12	PLUG, CONNECTOR 14P			
		< DIODE >			
D501	8-719-056-93	DIODE UDZ-TE-17-18B			
D502	8-719-068-68	DIODE SDZ6V2WA			
D503	8-719-069-56	DIODE UDZS-TE17-6.2B			
D504	8-719-069-54	DIODE UDZS-TE17-5.1B			
		< IC >			
IC501	8-759-826-21	IC LC75874W			
IC502	8-749-017-35	IC KSM-401N			
		< LIQUID CRYSTAL DISPLAY >			
LCD500	1-804-294-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< DIODE >			
LED510	8-719-078-19	LED LWA673-R1S2 (LCD BACK LIGHT)			
LED511	8-719-078-19	LED LWA673-R1S2 (LCD BACK LIGHT)			
LED512	8-719-078-19	LED LWA673-R1S2 (LCD BACK LIGHT)			
LED513	8-719-078-19	LED LWA673-R1S2 (LCD BACK LIGHT)			
		< SWITCH >			
LSW501	1-771-883-11	SWITCH, TACTILE (WITH LED) (OFF)			
LSW502	1-771-476-11	SWITCH, KEYBOARD (WITH LED) (MENU)			
LSW503	1-771-476-11	SWITCH, KEYBOARD (WITH LED) (DISC/PRESET +)			
LSW504	1-771-476-11	SWITCH, KEYBOARD (WITH LED) (DISC/PRESET –)			
LSW505	1-771-476-11	SWITCH, KEYBOARD (WITH LED) (▶▶I, SEEK +, ▶▶)			
LSW506	1-771-476-11	SWITCH, KEYBOARD (WITH LED) (I◀◀, SEEK –, ◀◀)			
LSW507	1-771-883-11	SWITCH, TACTILE (WITH LED) (SOUND)			
LSW508	1-771-476-11	SWITCH, KEYBOARD (WITH LED) (ENTER)			
LSW509	1-771-883-11	SWITCH, TACTILE (WITH LED) (DSPL)			
LSW510	1-771-883-11	SWITCH, TACTILE (WITH LED) (LIST)			
LSW513	1-771-476-11	SWITCH, KEYBOARD (WITH LED) (SOURCE)			
LSW514	1-771-883-11	SWITCH, TACTILE (WITH LED) (MODE)			
LSW515	1-771-500-21	SWITCH, KEYBOARD (WITH LED) (EQ7)			
LSW516	1-771-500-21	SWITCH, KEYBOARD (WITH LED) (POS)			
LSW517	1-771-883-11	SWITCH, TACTILE (WITH LED) (6)			
LSW518	1-771-883-11	SWITCH, TACTILE (WITH LED) (5)			
LSW519	1-771-883-11	SWITCH, TACTILE (WITH LED) (4)			
LSW520	1-771-883-11	SWITCH, TACTILE (WITH LED) (3)			
LSW521	1-771-883-11	SWITCH, TACTILE (WITH LED) (2/SHUF)			
LSW522	1-771-883-11	SWITCH, TACTILE (WITH LED) (1/REP)			
		< RESISTOR >			
R501	1-216-819-11	METAL CHIP	680	5%	1/16W
R502	1-216-819-11	METAL CHIP	680	5%	1/16W
R503	1-216-819-11	METAL CHIP	680	5%	1/16W
R504	1-216-821-11	METAL CHIP	1K	5%	1/16W
R505	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R506	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R507	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R508	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R509	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R510	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R514	1-216-819-11	METAL CHIP	680	5%	1/16W
R515	1-216-819-11	METAL CHIP	680	5%	1/16W
R516	1-216-819-11	METAL CHIP	680	5%	1/16W
R517	1-216-821-11	METAL CHIP	1K	5%	1/16W
R518	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R519	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R520	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R521	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R522	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R523	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R524	1-216-864-11	SHORT	0		
R525	1-216-817-11	METAL CHIP	470	5%	1/16W
R526	1-216-817-11	METAL CHIP	470	5%	1/16W
R527	1-216-817-11	METAL CHIP	470	5%	1/16W
R528	1-216-817-11	METAL CHIP	470	5%	1/16W
R532	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R533	1-216-815-11	METAL CHIP	330	5%	1/16W

DISPLAY | IN SELF SW | MAIN

Ref. No.	Part No.	Description			Remark
R534	1-216-857-11	METAL CHIP	1M	5%	1/16W
R535	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R536	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R537	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R538	1-216-841-11	METAL CHIP	47K	5%	1/16W
R539	1-216-821-11	METAL CHIP	1K	5%	1/16W
R540	1-216-821-11	METAL CHIP	1K	5%	1/16W
R541	1-216-821-11	METAL CHIP	1K	5%	1/16W
R542	1-216-818-11	METAL CHIP	560	5%	1/16W
R543	1-216-818-11	METAL CHIP	560	5%	1/16W
R544	1-216-864-11	SHORT	0		
R545	1-216-864-11	SHORT	0		
R546	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R547	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R548	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R549	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R550	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R551	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R552	1-216-818-11	METAL CHIP	560	5%	1/16W
R553	1-216-818-11	METAL CHIP	560	5%	1/16W
R554	1-216-817-11	METAL CHIP	470	5%	1/16W
R555	1-216-817-11	METAL CHIP	470	5%	1/16W
R556	1-216-817-11	METAL CHIP	470	5%	1/16W
R557	1-216-817-11	METAL CHIP	470	5%	1/16W
		< ROTARY ENCODER >			
RE501	1-418-818-21	ENCODER, ROTARY			
**********					
*	1-676-709-11	IN SELF SW BOARD			
		**********			
		< SWITCH >			
SW2	1-529-566-41	SWITCH, PUSH (1 KEY) (SELF)			
SW3	1-529-566-41	SWITCH, PUSH (1 KEY) (DISC IN)			
**********					
*	A-3283-087-A	MAIN BOARD, COMPLETE (CA660X)			
*	A-3283-091-A	MAIN BOARD, COMPLETE (CA690X)			
	A-3283-156-A	MAIN BOARD, COMPLETE (CA650X)			
		**********			
*	3-019-565-01	BRACKET (IC)			
*	3-041-261-01	BRACKET (TR)			
	3-226-766-01	HEAT SINK (MAIN)			
*	3-224-313-01	HEAT SINK (REG)			
	7-685-535-19	SCREW +BTP 2.6X10 TYPE 2 N-S			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
	7-685-795-09	SCREW +PTT 2.6X12 (S)			
		< CAPACITOR >			
C101	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C111	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C112	1-124-233-11	ELECT	10uF	20%	16V
C113	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V

Ref. No.	Part No.	Description			Remark
C121	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C122	1-124-233-11	ELECT	10uF	20%	16V
C123	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C131	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C132	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C133	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C143	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C201	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C211	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C212	1-124-233-11	ELECT	10uF	20%	16V
C213	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C221	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C222	1-124-233-11	ELECT	10uF	20%	16V
C223	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C231	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C232	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C233	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C243	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C311	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C312	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C321	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C322	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C402	1-124-259-11	ELECT	4.7uF	20%	16V (CA650X/CA690X)
C402	1-126-163-11	ELECT	4.7uF	20%	50V (CA660X)
C403	1-124-233-11	ELECT	10uF	20%	16V
C404	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C405	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C430	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C433	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C435	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C440	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C443	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C445	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C453	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C455	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C463	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C465	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C471	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V

Ref. No.	Part No.	Description			Remark
C476	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C479	1-128-057-11	ELECT	330uF	20%	6.3V (CA660X)
C601	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C602	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C603	1-126-382-11	ELECT	100uF	20%	16V
C604	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C605	1-126-382-11	ELECT	100uF	20%	16V
C606	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C607	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C608	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C610	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C611	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C612	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C701	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C702	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C703	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C704	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C705	1-126-176-11	ELECT	220uF	20%	10V
C706	1-124-233-11	ELECT	10uF	20%	16V
C708	1-126-153-11	ELECT	22uF	20%	6.3V
C709	1-126-176-11	ELECT	220uF	20%	10V
C710	1-126-153-11	ELECT	22uF	20%	6.3V
C801	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C804	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C805	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C806	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C809	1-128-647-11	DOUBLE LAYERS	0.1F		5.5V
C810	1-124-584-00	ELECT	100uF	20%	10V
C811	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C812	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C813	1-124-119-00	ELECT	330uF	20%	16V
C814	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C815	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C816	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C865	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C869	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C905	1-124-465-00	ELECT	0.47uF	20%	50V (CA660X)
C905	1-126-160-11	ELECT	1uF	20%	50V (CA650X/CA690X)
C906	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C907	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C912	1-124-233-11	ELECT	10uF	20%	16V
C914	1-135-473-21	ELECT	3300uF	20%	16V
C915	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C916	1-124-589-11	ELECT	47uF	20%	16V
C917	1-126-157-11	ELECT	10uF	20%	16V
C919	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C921	1-126-153-11	ELECT	22uF	20%	6.3V
C922	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C924	1-164-156-11	CERAMIC CHIP	0.1uF		25V (CA660X)
C925	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C926	1-126-157-11	ELECT	10uF	20%	16V
C927	1-126-157-11	ELECT	10uF	20%	16V
C928	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C929	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C930	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C931	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V (CA660X)
C932	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C933	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C934	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V (CA650X/CA690X)

< CONNECTOR >

CNJ801	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)
CNP701	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P
CNP802	1-569-907-11	SOCKET, CONNECTOR 12P
CNP902	1-774-701-11	PIN, CONNECTOR 16P

< JACK >

CNP801	1-764-270-21	JACK, STEREO MINIATURE (DIA.3.5) (REMOTE IN)

< DIODE >

D601	8-719-056-65	DIODE	1SS372-TE85L
D801	8-719-988-61	DIODE	1SS355TE-17
D802	8-719-988-61	DIODE	1SS355TE-17
D803	8-719-109-93	DIODE	MTZJ-T-77-6.2B
D804	8-719-110-49	DIODE	MTZJ-T-77-18B
D805	8-719-058-24	DIODE	RB501V-40TE-17
D806	8-719-056-93	DIODE	UDZ-TE-17-18B
D807	8-719-056-93	DIODE	UDZ-TE-17-18B
D809	8-719-109-97	DIODE	MTZJ-T-77-6.8B
D811	8-719-978-33	DIODE	UDZS-TE17-6.8B
D812	8-719-978-33	DIODE	UDZS-TE17-6.8B
D813	8-719-978-33	DIODE	UDZS-TE17-6.8B
D814	8-719-978-33	DIODE	UDZS-TE17-6.8B
D815	8-719-109-97	DIODE	MTZJ-T-77-6.8B
D816	8-719-978-33	DIODE	UDZS-TE17-6.8B
D817	8-719-109-97	DIODE	MTZJ-T-77-6.8B
D818	8-719-978-33	DIODE	UDZS-TE17-6.8B
D901	8-719-991-33	DIODE	1SS133T-77
D902	8-719-200-82	DIODE	11ES2-TA1B
D906	8-719-978-33	DIODE	UDZS-TE17-6.8B
D907	8-719-200-82	DIODE	11ES2-TA1B
D908	8-719-988-61	DIODE	1SS355TE-17
D909	1-216-864-11	SHORT	0
D911	8-719-079-97	DIODE	CRZ22(TE85L.SONY)
D912	8-719-079-97	DIODE	CRZ22(TE85L.SONY)
D913	8-719-079-97	DIODE	CRZ22(TE85L.SONY)
D914	8-719-079-97	DIODE	CRZ22(TE85L.SONY)
D915	8-719-079-97	DIODE	CRZ22(TE85L.SONY)
D916	8-719-079-97	DIODE	CRZ22(TE85L.SONY)

MAIN

Ref. No.	Part No.	Description	Remark
D917	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D918	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D919	8-719-200-82	DIODE 11ES2-TA1B	
D920	8-719-049-38	DIODE 1N5404TU	
D931	8-719-056-84	DIODE UDZS-TE17-7.5B	
D932	8-719-978-33	DIODE UDZS-TE17-6.8B	
D933	8-719-056-88	DIODE UDZ-TE-17-11B	(CA660X)
D934	1-216-864-11	SHORT 0	(CA650X/CA690X)
D934	8-719-978-33	DIODE UDZS-TE17-6.8B	(CA660X)
D935	1-216-864-11	SHORT 0	(CA650X/CA690X)
D935	8-719-988-61	DIODE 1SS355TE-17	(CA660X)
D941	8-719-109-89	DIODE MTZJ-T-77-5.6B	
		< IC >	
IC301	8-759-909-71	IC BA4558F-E2 (CA660X)	
IC302	8-759-909-71	IC BA4558F-E2 (CA660X)	
IC401	8-759-827-13	IC TDA7406T	
IC404	8-759-827-14	IC TA8268AH	
IC405	8-759-909-71	IC BA4558F-E2 (CA660X)	
IC406	8-759-909-71	IC BA4558F-E2 (CA660X)	
IC431	8-759-593-97	IC NJM2160AM-TE2 (CA660X)	
IC441	8-759-593-97	IC NJM2160AM-TE2 (CA660X)	
IC801	6-800-079-01	IC MN101C49KTG1	
IC802	8-759-682-69	IC XC61CN4302MR	
IC803	8-759-449-89	IC BA8270F-E2	
IC901	8-759-661-47	IC BA4908-V3	
		< JUMPER RESISTOR >	
JR101	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR102	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR103	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR104	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR105	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR106	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR107	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR108	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR201	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR202	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR203	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR204	1-216-864-11	SHORT 0	(CA650X/CA690X)
JR301	1-216-864-11	SHORT 0	
JR302	1-216-864-11	SHORT 0	(CA660X)
JR303	1-216-864-11	SHORT 0	(CA660X)
JR304	1-216-864-11	SHORT 0	(CA660X)
JR401	1-216-864-11	SHORT 0	(CA660X)
JR403	1-216-864-11	SHORT 0	(CA660X)
JR404	1-216-864-11	SHORT 0	(CA660X)
JR411	1-216-864-11	SHORT 0	
JR412	1-216-864-11	SHORT 0	
JR413	1-216-864-11	SHORT 0	(CA660X)
JR490	1-216-864-11	SHORT 0	
JR602	1-216-864-11	SHORT 0	
JR701	1-216-864-11	SHORT 0	
JR702	1-216-864-11	SHORT 0	
JR703	1-216-864-11	SHORT 0	
JR704	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
JR801	1-216-864-11	SHORT 0	
JR802	1-216-864-11	SHORT 0	
JR803	1-216-864-11	SHORT 0	
JR804	1-216-864-11	SHORT 0	
JR805	1-216-864-11	SHORT 0	
JR806	1-216-864-11	SHORT 0	
JR901	1-216-864-11	SHORT 0	
		< COIL >	
L900	1-419-476-31	COIL, CHOKE 250uH	
		< JACK >	
PJ401	1-794-068-11	JACK, PIN 6P (AUDIO OUT FRONT/REAR, BUS AUDIO IN)	
PJ601	1-793-598-11	JACK (ANTENNA)	
		< TRANSISTOR >	
Q101	8-729-920-21	TRANSISTOR DTC314TK-T-146	
Q102	8-729-920-21	TRANSISTOR DTC314TK-T-146	
Q201	8-729-920-21	TRANSISTOR DTC314TK-T-146	
Q202	8-729-920-21	TRANSISTOR DTC314TK-T-146	
Q801	8-729-027-31	TRANSISTOR DTA124EKA-T146	
Q803	8-729-900-53	TRANSISTOR DTC114EKA-T146	
Q901	8-729-049-40	TRANSISTOR STC2412G	
Q902	8-729-049-40	TRANSISTOR STC2412G	
Q905	8-729-049-43	TRANSISTOR STB1132Y	
Q906	8-729-901-00	TRANSISTOR DTC124EKA-T146	
Q907	8-729-900-53	TRANSISTOR DTC114EKA-T146	
Q908	8-729-901-00	TRANSISTOR DTC124EKA-T146	
Q909	8-729-027-31	TRANSISTOR DTA124EKA-T146	
Q910	8-729-021-82	TRANSISTOR 2SD2396K	
Q911	8-729-052-35	TRANSISTOR STD1664	
Q912	1-801-806-11	TRANSISTOR DTC144EK-T146	
Q913	8-729-901-04	TRANSISTOR DTA114EK-T146	
Q914	8-729-901-00	TRANSISTOR DTC124EKA-T146	
Q915	8-729-027-31	TRANSISTOR DTA124EKA-T146	
Q922	8-729-052-35	TRANSISTOR STD1664 (CA660X)	
Q923	8-729-901-00	TRANSISTOR DTC124EKA-T146 (CA660X)	
Q924	8-729-027-31	TRANSISTOR DTA124EKA-T146 (CA660X)	
		< RESISTOR >	
R111	1-216-813-11	METAL CHIP 220 5% 1/16W	
R112	1-218-725-11	RES-CHIP 24K 5% 1/16W	(CA660X)
R113	1-202-926-11	RES-CHIP 36K 5% 1/16W	(CA660X)
R114	1-216-864-11	SHORT 0	
R115	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R116	1-216-844-11	METAL CHIP 82K 5% 1/16W	(CA660X)
R117	1-216-845-11	METAL CHIP 100K 5% 1/16W	(CA660X)

Ref. No.	Part No.	Description			Remark
R118	1-216-864-11	SHORT	0		
R119	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R121	1-216-813-11	METAL CHIP	220	5%	1/16W
R122	1-218-725-11	RES-CHIP	24K	5%	1/16W (CA660X)
R123	1-202-926-11	RES-CHIP	36K	5%	1/16W (CA660X)
R124	1-216-864-11	SHORT	0		
R125	1-216-841-11	METAL CHIP	47K	5%	1/16W
R126	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA660X)
R127	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R128	1-216-864-11	SHORT	0		
R129	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R131	1-216-833-11	METAL CHIP	10K	5%	1/16W
R132	1-216-821-11	METAL CHIP	1K	5%	1/16W
R133	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R134	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R143	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R144	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R211	1-216-813-11	METAL CHIP	220	5%	1/16W
R212	1-218-725-11	RES-CHIP	24K	5%	1/16W (CA660X)
R213	1-202-926-11	RES-CHIP	36K	5%	1/16W (CA660X)
R214	1-216-864-11	SHORT	0		
R215	1-216-841-11	METAL CHIP	47K	5%	1/16W
R216	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA660X)
R217	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R218	1-216-864-11	SHORT	0		
R219	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R221	1-216-813-11	METAL CHIP	220	5%	1/16W
R222	1-218-725-11	RES-CHIP	24K	5%	1/16W (CA660X)
R223	1-202-926-11	RES-CHIP	36K	5%	1/16W (CA660X)
R224	1-216-864-11	SHORT	0		
R225	1-216-841-11	METAL CHIP	47K	5%	1/16W
R226	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA660X)
R227	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R228	1-216-864-11	SHORT	0		
R229	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R231	1-216-833-11	METAL CHIP	10K	5%	1/16W
R232	1-216-821-11	METAL CHIP	1K	5%	1/16W
R233	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R234	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R243	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R244	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R301	1-410-841-11	METAL CHIP	4.7K	5%	1/16W (CA660X)
R302	1-410-841-11	METAL CHIP	4.7K	5%	1/16W (CA660X)
R311	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R312	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R313	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R314	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R315	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R316	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R321	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R322	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R323	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R324	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R325	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R326	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R401	1-216-821-11	METAL CHIP	1K	5%	1/16W
R402	1-216-833-11	METAL CHIP	10K	5%	1/16W
R403	1-216-841-11	METAL CHIP	47K	5%	1/16W
R404	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R601	1-216-864-11	SHORT	0		
R602	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R604	1-216-845-11	METAL CHIP	100K	5%	1/16W
R608	1-216-809-11	METAL CHIP	100	5%	1/16W
R609	1-216-809-11	METAL CHIP	100	5%	1/16W
R610	1-216-864-11	SHORT	0		
R611	1-216-841-11	METAL CHIP	47K	5%	1/16W
R701	1-216-841-11	METAL CHIP	47K	5%	1/16W
R702	1-216-864-11	SHORT	0		
R703	1-216-864-11	SHORT	0		
R801	1-216-837-11	METAL CHIP	22K	5%	1/16W
R802	1-216-813-11	METAL CHIP	220	5%	1/16W
R803	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R804	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R805	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

MAIN

Ref. No.	Part No.	Description			Remark
R806	1-216-809-11	METAL CHIP	100	5%	1/16W
R807	1-216-809-11	METAL CHIP	100	5%	1/16W
R808	1-216-841-11	METAL CHIP	47K	5%	1/16W
R810	1-216-809-11	METAL CHIP	100	5%	1/16W
R811	1-216-809-11	METAL CHIP	100	5%	1/16W
R812	1-216-809-11	METAL CHIP	100	5%	1/16W
R813	1-216-809-11	METAL CHIP	100	5%	1/16W
R814	1-216-845-11	METAL CHIP	100K	5%	1/16W
R815	1-216-809-11	METAL CHIP	100	5%	1/16W
R816	1-216-821-11	METAL CHIP	1K	5%	1/16W
R817	1-216-809-11	METAL CHIP	100	5%	1/16W
R818	1-216-809-11	METAL CHIP	100	5%	1/16W
R819	1-216-821-11	METAL CHIP	1K	5%	1/16W
R820	1-216-821-11	METAL CHIP	1K	5%	1/16W
R821	1-216-845-11	METAL CHIP	100K	5%	1/16W
R822	1-216-845-11	METAL CHIP	100K	5%	1/16W
R823	1-216-845-11	METAL CHIP	100K	5%	1/16W
R825	1-216-675-00	METAL CHIP	10K	0.5%	1/10W
R826	1-216-675-00	METAL CHIP	10K	0.5%	1/10W
R827	1-216-837-11	METAL CHIP	22K	5%	1/16W
R828	1-216-821-11	METAL CHIP	1K	5%	1/16W
R830	1-216-809-11	METAL CHIP	100	5%	1/16W
R831	1-216-809-11	METAL CHIP	100	5%	1/16W
R834	1-216-809-11	METAL CHIP	100	5%	1/16W
R835	1-216-809-11	METAL CHIP	100	5%	1/16W
R836	1-216-675-00	METAL CHIP	10K	0.5%	1/10W
R839	1-216-849-11	METAL CHIP	220K	5%	1/16W
R840	1-216-849-11	METAL CHIP	220K	5%	1/16W
R841	1-216-849-11	METAL CHIP	220K	5%	1/16W
R842	1-216-833-11	METAL CHIP	10K	5%	1/16W
R843	1-247-807-31	CARBON	100	5%	1/4W
R844	1-247-807-31	CARBON	100	5%	1/4W
R845	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA650X/CA690X)
R846	1-216-864-11	SHORT	0		(CA660X)
R851	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA690X)
R852	1-216-864-11	SHORT	0		(CA650X/CA660X)
R853	1-216-841-11	METAL CHIP	47K	5%	1/16W (CA690X)
R854	1-249-417-11	CARBON	1K	5%	1/4W
R855	1-216-864-11	SHORT	0		
R856	1-216-821-11	METAL CHIP	1K	5%	1/16W
R857	1-216-833-11	METAL CHIP	10K	5%	1/16W
R861	1-216-845-11	METAL CHIP	100K	5%	1/16W
R862	1-216-845-11	METAL CHIP	100K	5%	1/16W
R863	1-216-833-11	METAL CHIP	10K	5%	1/16W
R864	1-216-833-11	METAL CHIP	10K	5%	1/16W
R901	1-216-833-11	METAL CHIP	10K	5%	1/16W
R906	1-216-805-11	METAL CHIP	47	5%	1/16W
R907	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R908	1-216-864-11	SHORT	0		
R909	1-216-821-11	METAL CHIP	1K	5%	1/16W
R910	1-216-841-11	METAL CHIP	47K	5%	1/16W
R911	1-216-833-11	METAL CHIP	10K	5%	1/16W
R912	1-216-833-11	METAL CHIP	10K	5%	1/16W
R913	1-216-073-00	METAL CHIP	10K	5%	1/10W
R914	1-216-836-11	METAL CHIP	18K	5%	1/16W (CA660X)
R914	1-216-841-11	METAL CHIP	47K	5%	1/16W (CA650X/CA690X)
R915	1-216-838-11	METAL CHIP	27K	5%	1/16W (CA660X)
R915	1-216-841-11	METAL CHIP	47K	5%	1/16W (CA650X/CA690X)
R916	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (CA650X/CA690X)
R916	1-216-835-11	METAL CHIP	15K	5%	1/16W (CA660X)
R917	1-216-845-11	METAL CHIP	100K	5%	1/16W
R919	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R920	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R921	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R922	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R923	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R924	1-216-809-11	METAL CHIP	100	5%	1/16W
R925	1-216-845-11	METAL CHIP	100K	5%	1/16W
R926	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R927	1-216-073-00	METAL CHIP	10K	5%	1/10W
R928	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R930	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R934	1-249-400-11	CARBON	39	5%	1/4W
R935	1-249-400-11	CARBON	39	5%	1/4W
R936	1-249-400-11	CARBON	39	5%	1/4W
R937	1-249-400-11	CARBON	39	5%	1/4W
R940	1-216-833-11	METAL CHIP	10K	5%	1/16W (CA660X)
		< SWITCH >			
S901	1-762-638-21	SWITCH, TACTILE (RESET)			
S902	1-771-540-11	SWITCH, PUSH (1 KEY) (NOSE DET)			
SW802	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT)			(CA690X)
		< THERMISTOR (POSITIVE) >			
TH900	1-801-792-21	THERMISTOR, POSITIVE			
		< TUNER >			
TU601	A-3220-738-A	TUNER UNIT (TUX-020)			
		< VIBRATOR >			
X801	1-781-822-21	VIBRATOR, CERAMIC (18.432MHz)			
X802	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			

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Ref. No.	Part No.	Description			Remark
*	1-679-988-11	RELAY BOARD			
		**********			
		< CONNECTOR >			
CNP902	1-794-064-12	SOCKET, CONNECTOR 14P			
CNP903	1-792-173-11	CABLE, FLAT (FFC) 12P			
		< DIODE >			
LED905	8-719-078-39	LED CL-170SR-CD-T (CD WINDOW)			
		< SWITCH >			
LSW916	1-771-883-11	SWITCH, TACTILE (WITH LED) (⏏)			
		< RESISTOR >			
R930	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R931	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R932	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
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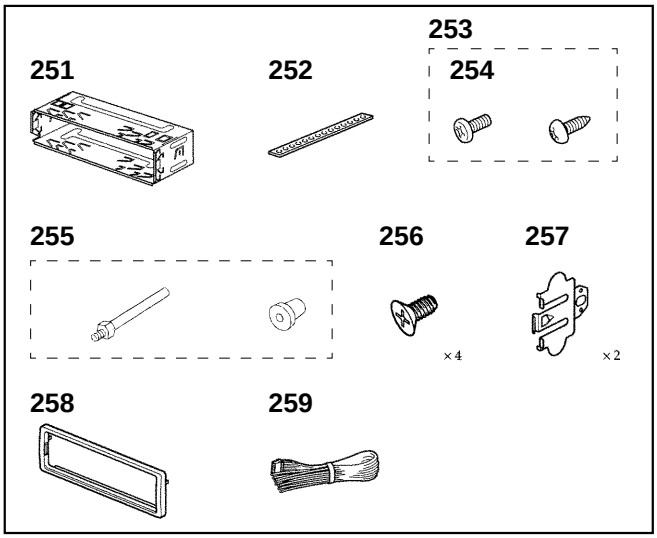
*	A-3283-048-A	SERVO BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C3	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C4	1-104-609-11	ELECT CHIP	100uF	20%	4V
C5	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C6	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C7	1-126-394-11	ELECT CHIP	10uF	20%	16V
C8	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C9	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C10	1-162-924-11	CERAMIC CHIP	56PF	5%	50V
C11	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V
C13	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C14	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C15	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C16	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C17	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C18	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C19	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C20	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C21	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C22	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C23	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C24	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C25	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C26	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C27	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C28	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C29	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C30	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C31	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C34	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C35	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C36	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C37	1-126-393-11	ELECT CHIP	33uF	20%	10V
C38	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C39	1-126-391-11	ELECT CHIP	47uF	20%	6.3V
C41	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C43	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C44	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
		< CONNECTOR >			
CN1	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P			
CN2	1-794-153-21	CONNECTOR, FPC (ZIF) 16P			
CN3	1-770-347-21	CONNECTOR, FPC 6P			
		< JUMPER RESISTOR >			
FB1	1-216-864-11	SHORT	0		
FB2	1-216-864-11	SHORT	0		
FB3	1-216-864-11	SHORT	0		
FB4	1-216-864-11	SHORT	0		
FB6	1-216-864-11	SHORT	0		
FB7	1-216-864-11	SHORT	0		
		< IC >			
IC1	8-759-699-98	IC uPD63711GC-8EU			
IC2	8-759-658-87	IC BA5810FP-E2			
		< TRANSISTOR >			
Q1	8-729-904-87	TRANSISTOR 2SB1197K-T-146-R			
		< RESISTOR >			
R3	1-216-797-11	METAL CHIP	10	5%	1/16W
R5	1-218-344-11	RES-CHIP	7.5K	5%	1/16W
R6	1-216-837-11	METAL CHIP	22K	5%	1/16W
R7	1-216-839-11	METAL CHIP	33K	5%	1/16W
R8	1-216-833-11	METAL CHIP	10K	5%	1/16W
R9	1-216-840-11	METAL CHIP	39K	5%	1/16W
R10	1-216-835-11	METAL CHIP	15K	5%	1/16W
R12	1-216-837-11	METAL CHIP	22K	5%	1/16W
R14	1-216-841-11	METAL CHIP	47K	5%	1/16W
R15	1-216-841-11	METAL CHIP	47K	5%	1/16W
R17	1-216-809-11	METAL CHIP	100	5%	1/16W
R18	1-216-809-11	METAL CHIP	100	5%	1/16W
R19	1-216-809-11	METAL CHIP	100	5%	1/16W
R20	1-216-809-11	METAL CHIP	100	5%	1/16W
R21	1-216-821-11	METAL CHIP	1K	5%	1/16W
R22	1-216-821-11	METAL CHIP	1K	5%	1/16W
R24	1-216-864-11	SHORT	0		
R25	1-216-864-11	SHORT	0		
R26	1-216-797-11	METAL CHIP	10	5%	1/16W
R29	1-216-833-11	METAL CHIP	10K	5%	1/16W
R30	1-216-833-11	METAL CHIP	10K	5%	1/16W

SERVO **SL SW**

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
SW1	1-762-944-12	SWITCH, DETECTION (SMALL TYPE) (DOWN)	
		< VIBRATOR >	
X1	1-781-759-21	VIBRATOR, CERAMIC (CHIP TYPE) (16.9344MHz)	
**********			
*	1-676-708-11	SL SW BOARD **********	
		< CONNECTOR >	
CN13	1-770-347-21	CONNECTOR, FPC 6P	
		< SWITCH >	
SW4	1-529-565-41	SWITCH, PUSH (1 KEY) (LIMIT)	
**********			
		MISCELLANEOUS **********	
9	1-776-207-82	CORD (WITH CONNECTOR) (POWER)	
201	X-3378-480-1	CHASSIS (OP) ASSY (including M901)	
206	1-676-707-11	PICK-UP FLEXIBLE BOARD	
207	1-677-182-11	MOTOR FLEXIBLE BOARD	
⚠210	8-820-103-03	PICK-UP, OPTICAL KSS-720A/K1RP	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
M902	A-3301-985-A	MOTOR ASSY, SLED (SLED)	
M903	A-3315-039-A	MOTOR SUB ASSY, LO (LOADING)	
**********			
		ACCESSORIES & PACKING MATERIALS **********	
	1-476-526-11	REMOTE COMMANDER (RM-X114)	
	3-230-047-01	LID, BATTERY CASE (for RM-X114)	
	3-226-762-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,TRADITIONALCHINESE) (CA690X)	
	3-226-822-11	MANUAL, INSTRUCTION (ENGLISH,SPANISH, TRADITIONAL CHINESE) (CA690X)	
	3-226-675-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH) (CA650X/CA660X)	
	3-226-961-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH) (CA650X/CA660X)	
	X-3378-390-2	CASE ASSY (for FRONT PANEL)	
**********			

Ref. No.	Part No.	Description	Remark
		********** HARDWARE LIST **********	
#1	7-685-793-09	SCREW +PTT 2.6X8 (S)	
#2	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#3	7-685-795-09	SCREW +PTT 2.6X12 (S)	
#4	7-685-106-19	SCREW +P 2X10 TYPE 2 NON-SLIT	
#5	7-621-772-20	SCREW +B 2X5	
#6	7-685-535-19	SCREW +BTP 2.6X10 TYPE 2 N-S	
#7	7-628-253-00	SCREW, SPECIAL	
#8	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3	
#9	7-627-553-17	SCREW, PRECISION +P 2X2 TYPE 3	
#10	7-627-850-28	SCREW, PRECISION +P 1.4X3	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS **********	
251	3-014-370-21	FRAME, FITTING	
252	3-916-012-01	BRACKET (ND), FITTING ASSIST (CA650X/CA660X)	
253	X-3368-725-1	SCREW ASSY, FITTING (CA650X/CA660X)	
254	7-682-160-01	SCREW +P 4X6 (CA650X/CA660X)	
255	X-3366-405-1	SCREW ASSY (EXP), FITTING (CA690X)	
256	3-934-325-01	SCREW (+K 5X8 TP)	
257	3-030-929-04	SPRING, FITTING	
258	3-226-508-01	COLLAR	
259	1-776-207-82	CORD (WITH CONNECTOR) (POWER)	



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

CDX-CA650X/CA660X/CA690X

SONY

SERVICE MANUAL

US Model
Canadian Model
CDX-CA650X/CA660X
E Model
CDX-CA690X

Ver 1.1 2001. 07

SUPPLEMENT-1

File this supplement with the service manual.

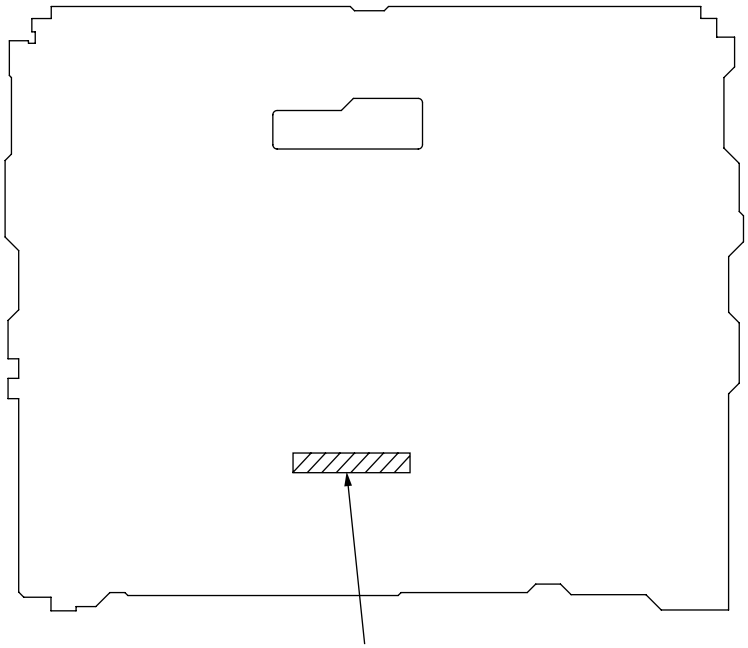
Subject : Change of Main Board

(ECN-CSA04450)

When performing service and inspection, check the suffix of the part number of the main board.

1. DISCRIMINATION

– MAIN BOARD (COMPONENT SIDE) –



MAIN Board Part No.
Former :1-679-989-11
New :1-679-989-12

TABLE OF CONTENTS

1. Printed Wiring Board –Main Section– 4
2. Schematic Diagram –Main Section (1/2)– 5
3. Schematic Diagram –Main Section (2/2)– 6
4. Electrical Parts List 7

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

for schematic diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- ▬▬ : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - ⇨ : FM
  - ➡ : AM
  - ⇨ : CD

for printed wiring boards:

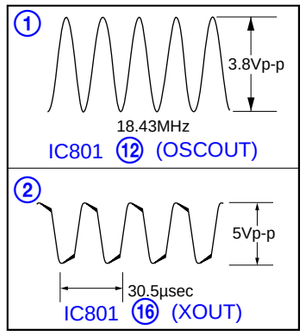
- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▬ : Pattern from the side which enables seeing. (The other layer's patterns are not indicated.)

Caution:
Pattern face side: (Side B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A) Parts on the parts face side seen from the parts face are indicated.

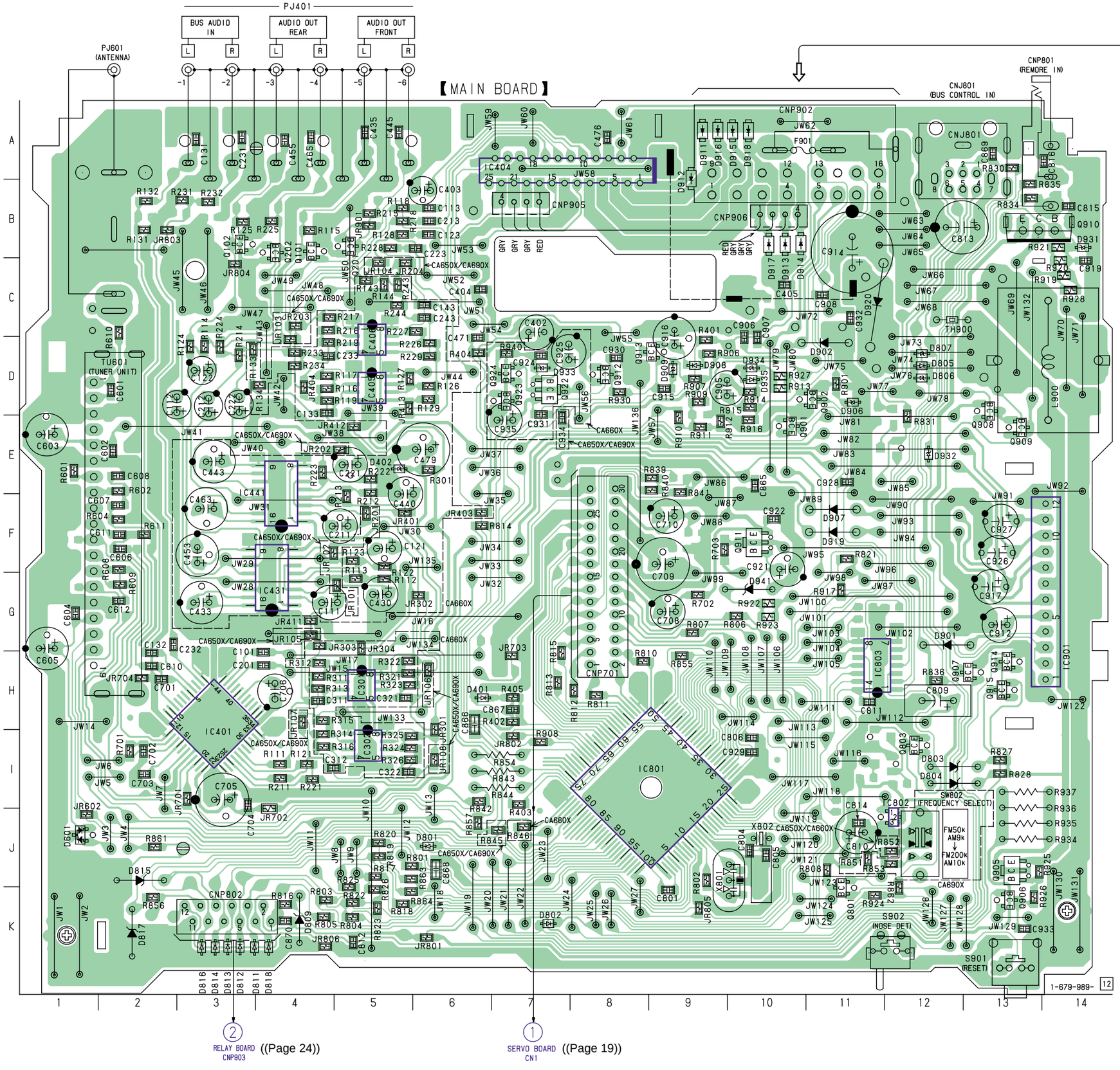
- ( ) : Refer to page of Supplement-1.
- (( )) : Refer to page of Service Manual.

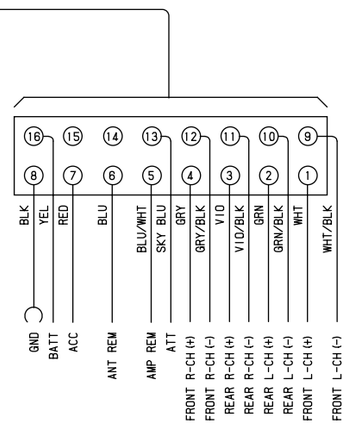
• Waveforms

— Main Board —



1. PRINTED WIRING BOARD — MAIN SECTION —





• Semiconductor Location

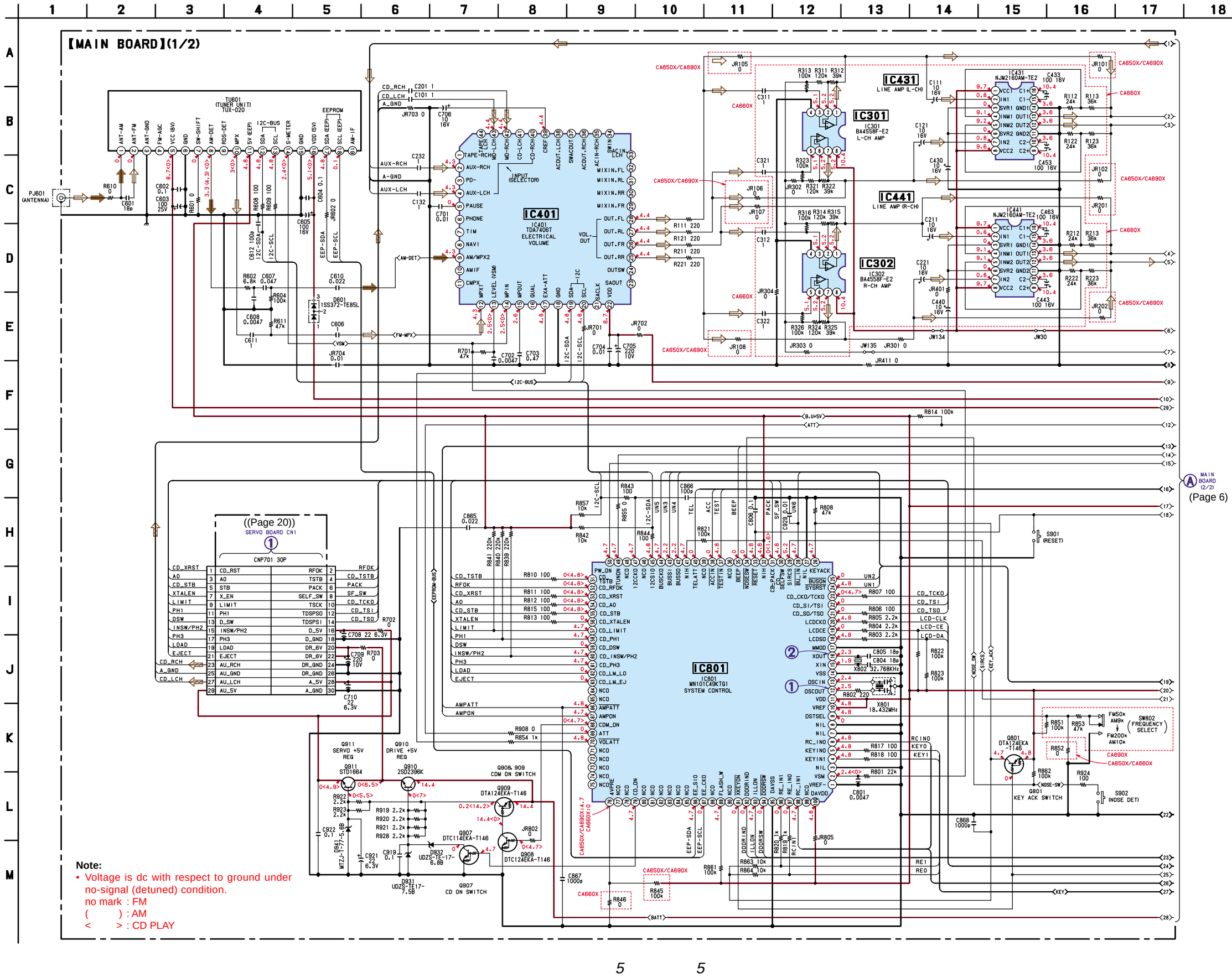
Ref. No.	Location	Ref. No.	Location
(D401)	H-6	D935	D-10
(D402)	E-5	D941	G-10
D601	J-1		
D801	J-6	(IC301)	H-5
D802	K-7	(IC302)	I-5
D803	I-12	IC401	I-3
D804	I-12	IC404	A-7
D805	D-12	(IC405)	D-5
D806	D-12	(IC406)	D-5
D807	D-12	(IC431)	G-4
D809	K-4	(IC441)	E-4
D811	K-4	IC801	I-9
D812	K-3	IC802	I-12
D813	K-3	IC803	H-11
D814	K-3	IC901	H-14
D815	J-2		
D816	K-3	Q101	B-4
D817	K-2	Q102	B-3
D818	K-4	Q201	C-5
D901	G-12	Q202	B-4
D902	D-11	Q801	K-11
D906	D-11	Q803	I-12
D907	F-11	Q901	E-10
D908	D-9	Q902	D-11
D909	D-9	Q905	J-13
D911	A-9	Q906	K-13
D912	A-9	Q907	H-12
D913	C-10	Q908	E-13
D914	C-10	Q909	E-13
D915	A-10	Q910	B-14
D916	A-9	Q911	F-10
D917	C-10	Q912	D-8
D918	A-10	Q913	D-8
D919	F-11	Q914	H-13
D920	C-11	Q915	H-13
D931	B-14	(Q922)	D-7
D932	E-12	(Q923)	D-7
(D933)	D-7	(Q924)	D-7
D934	D-10		

( ): CDX-CA660X only

• Refer to page 3 for Waveforms.

2. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) —

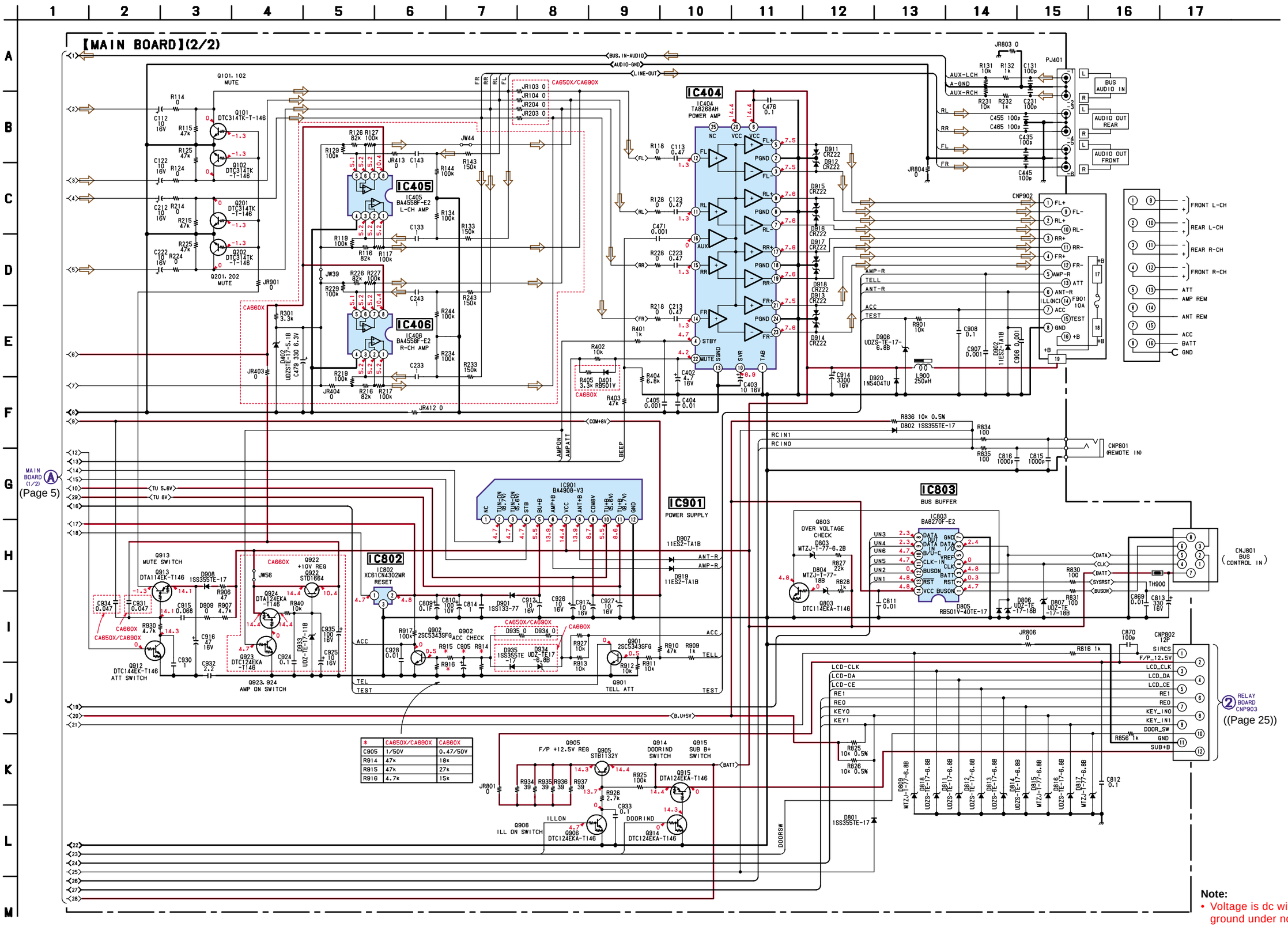
• Refer to page 28 of Service Manual for IC Block Diagrams.



Note:

- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM
  ( ) : AM
  < > : CD PLAY

3. SCHEMATIC DIAGRAM — MAIN SECTION (2/2) — • Refer to page 29 of Service Manual for IC Block Diagrams.



*	CA650X/CA690X	CA660X
C905	1/50V	0.47/50V
R914	47k	18k
R915	47k	27k
R916	4.7k	15k

Note:
- Voltage is dc with respect to ground under no-signal (detuned) condition.
  no mark : FM

MAIN

4. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-3283-087-A	MAIN BOARD, COMPLETE (CA660X)			
*	A-3283-091-A	MAIN BOARD, COMPLETE (CA690X)			
*	A-3283-156-A	MAIN BOARD, COMPLETE (CA650X)			
		**********			
	3-019-565-01	BRACKET (IC)			
*	3-041-261-01	BRACKET (TR)			
*	3-224-313-01	HEAT SINK (REG)			
	3-226-766-01	HEAT SINK (MAIN)			
	7-685-535-19	SCREW +BTP 2.6X10 TYPE2 N-S			
	7-685-793-09	SCREW +PTT 2.6X8 (S)			
	7-685-795-09	SCREW +PTT 2.6X12 (S)			
		< CAPACITOR >			
C101	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C111	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C112	1-124-233-11	ELECT	10uF	20%	16V
C113	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C121	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C122	1-124-233-11	ELECT	10uF	20%	16V
C123	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C131	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C132	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C133	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C143	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C201	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C211	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C212	1-124-233-11	ELECT	10uF	20%	16V
C213	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C221	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C222	1-124-233-11	ELECT	10uF	20%	16V
C223	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C231	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C232	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C233	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C243	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C311	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C312	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C321	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C322	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (CA660X)
C402	1-124-259-11	ELECT	4.7uF	20%	16V
C403	1-124-233-11	ELECT	10uF	20%	16V
C404	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C405	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C430	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C433	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C435	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C440	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C443	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C445	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C453	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C455	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C463	1-126-382-11	ELECT	100uF	20%	16V (CA660X)
C465	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C471	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C476	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C479	1-128-057-11	ELECT	330uF	20%	6.3V (CA660X)
C601	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C602	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C603	1-104-665-11	ELECT	100uF	20%	25V
C604	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C605	1-126-382-11	ELECT	100uF	20%	16V
C606	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C607	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C608	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C610	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C611	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C612	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C701	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C702	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C703	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C704	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C705	1-126-176-11	ELECT	220uF	20%	10V

MAIN

Ref. No.	Part No.	Description			Remark
C706	1-124-233-11	ELECT	10uF	20%	16V
C708	1-126-153-11	ELECT	22uF	20%	6.3V
C709	1-126-176-11	ELECT	220uF	20%	10V
C710	1-126-153-11	ELECT	22uF	20%	6.3V
C801	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C804	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C805	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C806	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C809	1-128-647-11	DOUBLE LAYERS	0.1F		5.5V
C810	1-124-584-00	ELECT	100uF	20%	10V
C811	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C812	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C813	1-124-119-00	ELECT	330uF	20%	16V
C814	1-125-837-91	CERAMIC CHIP	1uF	10%	6.3V
C815	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C816	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C865	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C866	1-163-181-00	CERAMIC CHIP	100PF	5%	50V
C867	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C868	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V
C869	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C870	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C905	1-124-465-00	ELECT	0.47uF	20%	50V (CA660X)
C905	1-126-160-11	ELECT	1uF	20%	50V (CA650X/CA690X)
C906	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C907	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C908	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C912	1-124-233-11	ELECT	10uF	20%	16V
C914	1-135-473-21	ELECT	3300uF	20%	16V
C915	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C916	1-124-589-11	ELECT	47uF	20%	16V
C917	1-126-157-11	ELECT	10uF	20%	16V
C919	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C921	1-126-153-11	ELECT	22uF	20%	6.3V
C922	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C924	1-164-156-11	CERAMIC CHIP	0.1uF		25V (CA660X)
C925	1-124-233-11	ELECT	10uF	20%	16V (CA660X)
C926	1-126-157-11	ELECT	10uF	20%	16V
C927	1-126-157-11	ELECT	10uF	20%	16V
C928	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C929	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C930	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
C931	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V (CA660X)
C932	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C933	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C934	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V (CA650X/CA690X)
C935	1-126-382-11	ELECT	100uF	20%	16V (CA660X)

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CNJ801	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)	
CNP701	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P	
CNP802	1-569-907-11	SOCKET, CONNECTOR 12P	
CNP902	1-774-701-11	PIN, CONNECTOR 16P	
		< JACK >	
CNP801	1-764-270-21	JACK (REMOTE IN)	
		< DIODE >	
D401	8-719-058-24	DIODE RB501V-40TE-17 (CA660X)	
D402	8-719-069-54	DIODE UDZSTE-175.1B (CA660X)	
D601	8-719-056-65	DIODE 1SS372-TE85L	
D801	8-719-988-61	DIODE 1SS355TE-17	
D802	8-719-988-61	DIODE 1SS355TE-17	
D803	8-719-109-93	DIODE RD6.2ESB2	
D804	8-719-110-49	DIODE RD18ESB2	
D805	8-719-058-24	DIODE RB501V-40TE-17	
D806	8-719-056-93	DIODE UDZ-TE-17-18B	
D807	8-719-056-93	DIODE UDZ-TE-17-18B	
D809	8-719-109-97	DIODE RD6.8ESB2	
D811	8-719-978-33	DIODE DTZ-TT11-6.8B	
D812	8-719-978-33	DIODE DTZ-TT11-6.8B	
D813	8-719-978-33	DIODE DTZ-TT11-6.8B	
D814	8-719-978-33	DIODE DTZ-TT11-6.8B	
D815	8-719-109-97	DIODE RD6.8ESB2	
D816	8-719-978-33	DIODE DTZ-TT11-6.8B	
D817	8-719-109-97	DIODE RD6.8ESB2	
D818	8-719-978-33	DIODE DTZ-TT11-6.8B	
D901	8-719-991-33	DIODE 1SS133T-77	
D902	8-719-200-82	DIODE 11ES2	
D906	8-719-978-33	DIODE DTZ-TT11-6.8B	
D907	8-719-200-82	DIODE 11ES2	
D908	8-719-988-61	DIODE 1SS355TE-17	
D909	1-216-864-11	METAL CHIP 0 5% 1/16W	
D911	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D912	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D913	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D914	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D915	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D916	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D917	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D918	8-719-079-97	DIODE CRZ22(TE85L.SONY)	
D919	8-719-200-82	DIODE 11ES2	
D920	8-719-049-38	DIODE 1N5404TU	
D931	8-719-056-84	DIODE UDZ-TE-17-7.5B	
D932	8-719-978-33	DIODE DTZ-TT11-6.8B	
D933	8-719-056-88	DIODE UDZ-TE-17-11B (CA660X)	
D934	1-216-864-11	METAL CHIP 0 5% 1/16W	(CA650X/CA690X)
D934	8-719-978-33	DIODE DTZ-TT11-6.8B (CA660X)	

Ref. No.	Part No.	Description			Remark
D935	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
D935	8-719-988-61	DIODE 1SS355TE-17 (CA660X)			
D941	8-719-109-89	DIODE RD5.6ESB2			
		< IC >			
IC301	8-759-909-71	IC BA4558F-E2 (CA660X)			
IC302	8-759-909-71	IC BA4558F-E2 (CA660X)			
IC401	8-759-827-13	IC TDA7406T			
IC404	8-759-827-14	IC TA8268AH			
IC405	8-759-909-71	IC BA4558F-E2 (CA660X)			
IC406	8-759-909-71	IC BA4558F-E2 (CA660X)			
IC431	8-759-593-97	IC NJM2160AM-TE2 (CA660X)			
IC441	8-759-593-97	IC NJM2160AM-TE2 (CA660X)			
IC801	6-800-079-01	IC MN101C49KTG1			
IC802	8-759-682-69	IC XC61CN4302MR			
IC803	8-759-449-89	IC BA8270F-E2			
IC901	8-759-661-47	IC BA4908-V3			
		< JUMPER RESISTOR >			
JR101	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR102	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR103	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR104	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR105	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR106	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR107	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR108	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR201	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR202	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR203	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR204	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA690X)
JR301	1-216-864-11	METAL CHIP	0	5%	1/16W
JR302	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
JR303	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
JR304	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
JR401	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
JR403	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
JR404	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
JR411	1-216-864-11	METAL CHIP	0	5%	1/16W
JR412	1-216-864-11	METAL CHIP	0	5%	1/16W
JR413	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
JR602	1-216-864-11	METAL CHIP	0	5%	1/16W
JR701	1-216-864-11	METAL CHIP	0	5%	1/16W
JR702	1-216-864-11	METAL CHIP	0	5%	1/16W
JR703	1-216-864-11	METAL CHIP	0	5%	1/16W
JR704	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
JR801	1-216-864-11	METAL CHIP	0	5%	1/16W
JR802	1-216-864-11	METAL CHIP	0	5%	1/16W
JR803	1-216-864-11	METAL CHIP	0	5%	1/16W
JR804	1-216-864-11	METAL CHIP	0	5%	1/16W
JR805	1-216-864-11	METAL CHIP	0	5%	1/16W
JR806	1-216-864-11	METAL CHIP	0	5%	1/16W
JR901	1-216-864-11	METAL CHIP	0	5%	1/16W
		< COIL >			
L900	1-419-476-31	COIL, CHOKE	250uH		
		< JACK >			
PJ401	1-794-068-11	JACK, PIN 6P (AUDIO OUT FRONT/REAR, BUS AUDIO IN)			
PJ601	1-793-598-11	JACK (ANTENNA)			
		< TRANSISTOR >			
Q101	8-729-920-21	TRANSISTOR DTC314TKH04			
Q102	8-729-920-21	TRANSISTOR DTC314TKH04			
Q201	8-729-920-21	TRANSISTOR DTC314TKH04			
Q202	8-729-920-21	TRANSISTOR DTC314TKH04			
Q801	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q803	8-729-900-53	TRANSISTOR DTC114EK			
Q901	8-729-049-40	TRANSISTOR 2SC5343SFG			
Q902	8-729-049-40	TRANSISTOR 2SC5343SFG			
Q905	8-729-049-43	TRANSISTOR STB1132Y			
Q906	8-729-901-00	TRANSISTOR DTC124EK			
Q907	8-729-900-53	TRANSISTOR DTC114EK			
Q908	8-729-901-00	TRANSISTOR DTC124EK			
Q909	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q910	8-729-021-82	TRANSISTOR 2SD2396K			
Q911	8-729-052-35	TRANSISTOR STD1664			
Q912	1-801-806-11	TRANSISTOR DTC144EKA			
Q913	8-729-901-04	TRANSISTOR DTA114EK			
Q914	8-729-901-00	TRANSISTOR DTC124EK			
Q915	8-729-027-31	TRANSISTOR DTA124EKA-T146			
Q922	8-729-052-35	TRANSISTOR STD1664 (CA660X)			
Q923	8-729-901-00	TRANSISTOR DTC124EK (CA660X)			
Q924	8-729-027-31	TRANSISTOR DTA124EKA-T146 (CA660X)			

MAIN

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R111	1-216-813-11	METAL CHIP	220	5%	1/16W
R112	1-218-725-11	RES-CHIP	24K	5%	1/16W (CA660X)
R113	1-202-926-11	RES-CHIP	36K	5%	1/16W (CA660X)
R114	1-216-864-11	METAL CHIP	0	5%	1/16W
R115	1-216-841-11	METAL CHIP	47K	5%	1/16W
R116	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA660X)
R117	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R118	1-216-864-11	METAL CHIP	0	5%	1/16W
R119	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R121	1-216-813-11	METAL CHIP	220	5%	1/16W
R122	1-218-725-11	RES-CHIP	24K	5%	1/16W (CA660X)
R123	1-202-926-11	RES-CHIP	36K	5%	1/16W (CA660X)
R124	1-216-864-11	METAL CHIP	0	5%	1/16W
R125	1-216-841-11	METAL CHIP	47K	5%	1/16W
R126	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA660X)
R127	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R128	1-216-864-11	METAL CHIP	0	5%	1/16W
R129	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R131	1-216-833-11	METAL CHIP	10K	5%	1/16W
R132	1-216-821-11	METAL CHIP	1K	5%	1/16W
R133	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R134	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R143	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R144	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R211	1-216-813-11	METAL CHIP	220	5%	1/16W
R212	1-218-725-11	RES-CHIP	24K	5%	1/16W (CA660X)
R213	1-202-926-11	RES-CHIP	36K	5%	1/16W (CA660X)
R214	1-216-864-11	METAL CHIP	0	5%	1/16W
R215	1-216-841-11	METAL CHIP	47K	5%	1/16W
R216	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA660X)
R217	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R218	1-216-864-11	METAL CHIP	0	5%	1/16W
R219	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R221	1-216-813-11	METAL CHIP	220	5%	1/16W
R222	1-218-725-11	RES-CHIP	24K	5%	1/16W (CA660X)
R223	1-202-926-11	RES-CHIP	36K	5%	1/16W (CA660X)
R224	1-216-864-11	METAL CHIP	0	5%	1/16W
R225	1-216-841-11	METAL CHIP	47K	5%	1/16W
R226	1-216-844-11	METAL CHIP	82K	5%	1/16W (CA660X)
R227	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R228	1-216-864-11	METAL CHIP	0	5%	1/16W
R229	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R231	1-216-833-11	METAL CHIP	10K	5%	1/16W
R232	1-216-821-11	METAL CHIP	1K	5%	1/16W
R233	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R234	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R243	1-216-847-11	METAL CHIP	150K	5%	1/16W (CA660X)
R244	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R301	1-216-827-11	METAL CHIP	3.3K	5%	1/16W (CA660X)
R311	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R312	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R313	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R314	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R315	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R316	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R321	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R322	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R323	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R324	1-216-846-11	METAL CHIP	120K	5%	1/16W (CA660X)
R325	1-216-840-11	METAL CHIP	39K	5%	1/16W (CA660X)
R326	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA660X)
R401	1-216-821-11	METAL CHIP	1K	5%	1/16W
R402	1-216-833-11	METAL CHIP	10K	5%	1/16W
R403	1-216-841-11	METAL CHIP	47K	5%	1/16W
R404	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R405	1-216-827-11	METAL CHIP	3.3K	5%	1/16W (CA660X)
R601	1-216-864-11	METAL CHIP	0	5%	1/16W
R602	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R604	1-216-845-11	METAL CHIP	100K	5%	1/16W
R608	1-216-809-11	METAL CHIP	100	5%	1/16W

Ref. No.	Part No.	Description			Remark
R609	1-216-809-11	METAL CHIP	100	5%	1/16W
R610	1-216-864-11	METAL CHIP	0	5%	1/16W
R611	1-216-841-11	METAL CHIP	47K	5%	1/16W
R701	1-216-841-11	METAL CHIP	47K	5%	1/16W
R702	1-216-864-11	METAL CHIP	0	5%	1/16W
R703	1-216-864-11	METAL CHIP	0	5%	1/16W
R801	1-216-837-11	METAL CHIP	22K	5%	1/16W
R802	1-216-813-11	METAL CHIP	220	5%	1/16W
R803	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R804	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R805	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R806	1-216-809-11	METAL CHIP	100	5%	1/16W
R807	1-216-809-11	METAL CHIP	100	5%	1/16W
R808	1-216-841-11	METAL CHIP	47K	5%	1/16W
R810	1-216-809-11	METAL CHIP	100	5%	1/16W
R811	1-216-809-11	METAL CHIP	100	5%	1/16W
R812	1-216-809-11	METAL CHIP	100	5%	1/16W
R813	1-216-809-11	METAL CHIP	100	5%	1/16W
R814	1-216-845-11	METAL CHIP	100K	5%	1/16W
R815	1-216-809-11	METAL CHIP	100	5%	1/16W
R816	1-216-821-11	METAL CHIP	1K	5%	1/16W
R817	1-216-809-11	METAL CHIP	100	5%	1/16W
R818	1-216-809-11	METAL CHIP	100	5%	1/16W
R819	1-216-821-11	METAL CHIP	1K	5%	1/16W
R820	1-216-821-11	METAL CHIP	1K	5%	1/16W
R821	1-216-845-11	METAL CHIP	100K	5%	1/16W
R822	1-216-845-11	METAL CHIP	100K	5%	1/16W
R823	1-216-845-11	METAL CHIP	100K	5%	1/16W
R825	1-216-675-00	METAL CHIP	10K	0.5%	1/10W
R826	1-216-675-00	METAL CHIP	10K	0.5%	1/10W
R827	1-216-837-11	METAL CHIP	22K	5%	1/16W
R828	1-216-821-11	METAL CHIP	1K	5%	1/16W
R830	1-216-809-11	METAL CHIP	100	5%	1/16W
R831	1-216-809-11	METAL CHIP	100	5%	1/16W
R834	1-216-809-11	METAL CHIP	100	5%	1/16W
R835	1-216-809-11	METAL CHIP	100	5%	1/16W
R836	1-216-675-00	METAL CHIP	10K	0.5%	1/10W
R839	1-216-849-11	METAL CHIP	220K	5%	1/16W
R840	1-216-849-11	METAL CHIP	220K	5%	1/16W
R841	1-216-849-11	METAL CHIP	220K	5%	1/16W
R842	1-216-833-11	METAL CHIP	10K	5%	1/16W
R843	1-247-807-31	CARBON	100	5%	1/4W
R844	1-247-807-31	CARBON	100	5%	1/4W
R845	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA650X/CA690X)
R846	1-216-864-11	METAL CHIP	0	5%	1/16W (CA660X)
R851	1-216-845-11	METAL CHIP	100K	5%	1/16W (CA690X)
R852	1-216-864-11	METAL CHIP	0	5%	1/16W (CA650X/CA660X)
R853	1-216-841-11	METAL CHIP	47K	5%	1/16W (CA690X)
R854	1-249-417-11	CARBON	1K	5%	1/4W
R855	1-216-864-11	METAL CHIP	0	5%	1/16W
R856	1-216-821-11	METAL CHIP	1K	5%	1/16W
R857	1-216-833-11	METAL CHIP	10K	5%	1/16W
R861	1-216-845-11	METAL CHIP	100K	5%	1/16W
R862	1-216-845-11	METAL CHIP	100K	5%	1/16W
R863	1-216-833-11	METAL CHIP	10K	5%	1/16W
R864	1-216-833-11	METAL CHIP	10K	5%	1/16W
R901	1-216-833-11	METAL CHIP	10K	5%	1/16W
R906	1-216-805-11	METAL CHIP	47	5%	1/16W
R907	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R908	1-216-864-11	METAL CHIP	0	5%	1/16W
R909	1-216-821-11	METAL CHIP	1K	5%	1/16W
R910	1-216-841-11	METAL CHIP	47K	5%	1/16W
R911	1-216-833-11	METAL CHIP	10K	5%	1/16W
R912	1-216-833-11	METAL CHIP	10K	5%	1/16W
R913	1-216-073-00	RES-CHIP	10K	5%	1/10W
R914	1-216-836-11	METAL CHIP	18K	5%	1/16W (CA660X)
R914	1-216-841-11	METAL CHIP	47K	5%	1/16W (CA650X/CA690X)
R915	1-216-838-11	METAL CHIP	27K	5%	1/16W (CA660X)
R915	1-216-841-11	METAL CHIP	47K	5%	1/16W (CA650X/CA690X)
R916	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (CA650X/CA690X)
R916	1-216-835-11	METAL CHIP	15K	5%	1/16W (CA660X)
R917	1-216-845-11	METAL CHIP	100K	5%	1/16W
R919	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R920	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R921	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R922	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R923	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R924	1-216-809-11	METAL CHIP	100	5%	1/16W
R925	1-216-845-11	METAL CHIP	100K	5%	1/16W
R926	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
R927	1-216-073-00	RES-CHIP	10K	5%	1/10W
R928	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R930	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R934	1-249-400-11	CARBON	39	5%	1/4W
R935	1-249-400-11	CARBON	39	5%	1/4W
R936	1-249-400-11	CARBON	39	5%	1/4W
R937	1-249-400-11	CARBON	39	5%	1/4W
R940	1-216-833-11	METAL CHIP	10K	5%	1/16W (CA660X)

< SWITCH >

S901	1-762-638-21	SWITCH, TACTILE (RESET)	
S902	1-771-540-11	SWITCH, PUSH (1 KEY) (NOSE DET)	
SW802	1-571-478-11	SWITCH, SLIDE (FREQUENCY SELECT)	(CA690X)

MAIN

Ref. No.	Part No.	Description	Remark
		< THERMISTOR (POSITIVE) >	
TH900	1-801-792-21	THERMISTOR, POSITIVE	
		< TUNER >	
TU601	A-3220-812-A	TUNER UNIT (TUX-020)	
		< VIBRATOR >	
X801	1-781-822-21	VIBRATOR, CERAMIC (18.432MHz)	
X802	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)	

MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.1	2001. 07	Change of Main board (ECN-CSA04450)
1.0	2001. 01	New